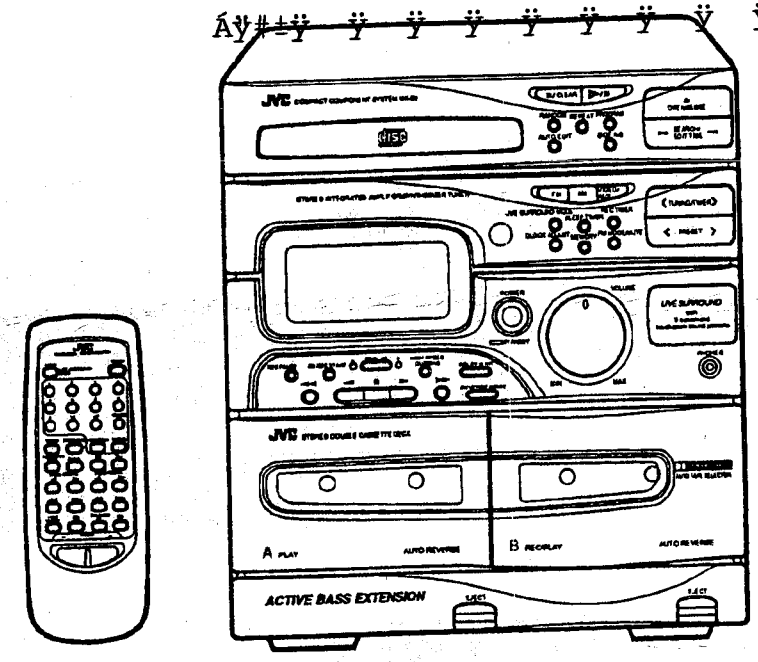
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXS2BK

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Chelry Trading Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk



COMPACT disc DIGITAL AUDIO

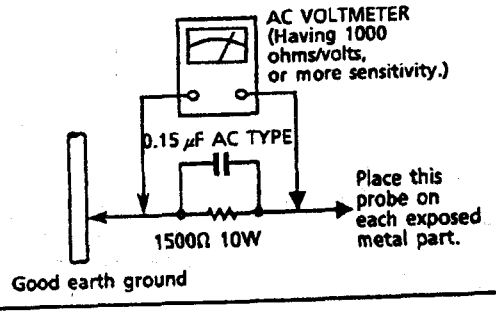
Contents

Safety Precautions 1-2
Important for Laser Products 1-3
Instruction Book 1-4
Description of Major LSIs 1-26
Internal Block Diagram of Other ICs 1-36
Internal Connection of the FL Display Tube 1-39
Disassembly Procedures 1-40
Application Points for Grease 1-45
Adjustment Procedures 1-46
Flow of Functional Operation Until TOC is Read 1-52
Maintenance of Laser Pickup 1-53
Replacement of Laser Pickup 1-53
Troubleshooting 1-54
Block Diagrams 1-58
Schematic Diagrams ..... Insertion
Printed Circuit Boards ..... Insertion
Parts List ..... Separate-volume Insertion

No. 20399
Feb. 1993

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION : If safety switches malfunction, the laser is able to function.
6. CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
7. CAUTION : The compact disc player provides a laser diode of wavelength 780-790nm and optical output power typical 3mW at the laser diode.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

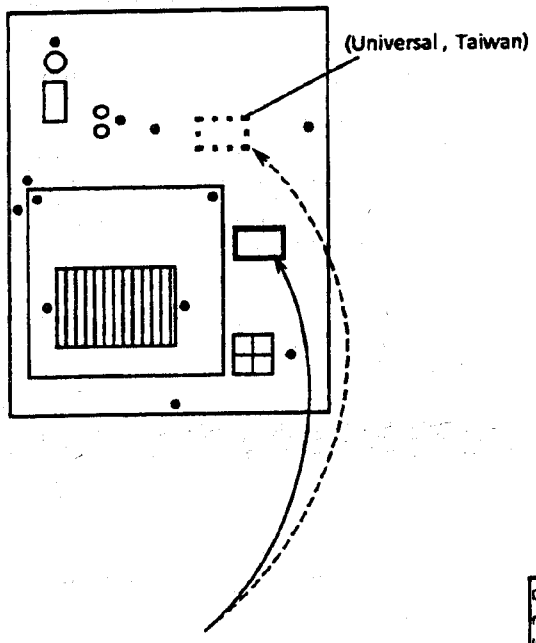
VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

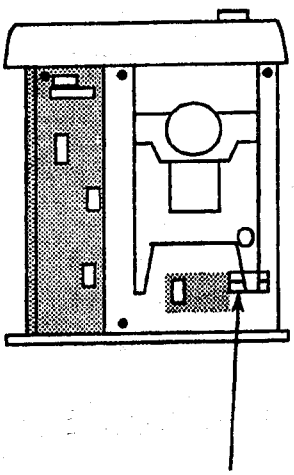
REPRODUCTION AND POSITION OF LABELS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk



CLASS 1
LASER PRODUCT

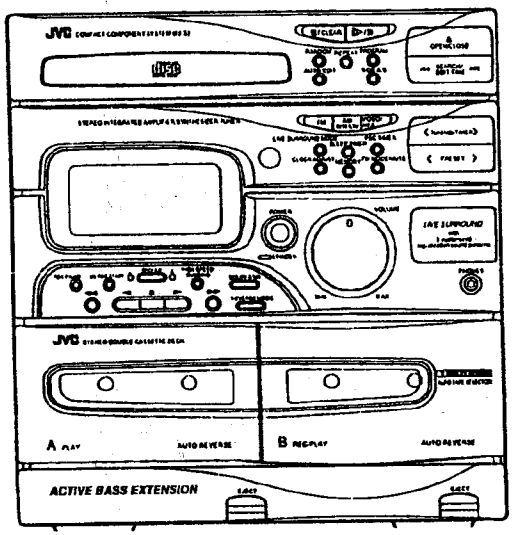
CLASSIFICATION LABEL
(Except for the U. S. A. and Canada)

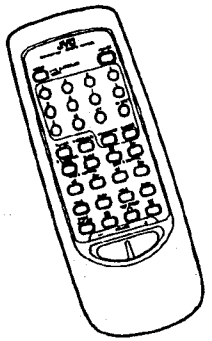


WARNING LABEL
(Except for the U. S. A.)

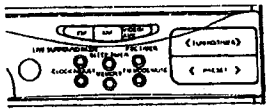
DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)	VARNING: Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej stålen. (s)
ADVARSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgåudsættelse for stråling. (d)	VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)

Control Panel and Remote—Illustrations
Bedienfeld und Fernbedienung—Abbildungen
Panneau de commandes et télécommande—Illustrations
Bedieningspaneel en afstandsbediening — Afbeeldingen
Ilustraciones del panel de control y del controlador remoto
Pannello comandi e telecomando—Illustrazioni





Tuner Section for Canadian Model
Tuner-gedeelte van het Canada model
Section tuner pour le modèle canadien
Tuner-gedeelte van het canadese model
Sección del sintonizador del modelo para canadá
Sezione sintonizzatore del modello per il Canada



English
English
Deutsch
Français
Nederlands
Español
Italiano

Table of Contents

Control Panel and Remote— Illustrations G-4

Features 2
How to Put Batteries in the Remote Control 2
Connection Diagrams and Instructions 3
Connecting the AM (MW/LW) and FM Antennas 3
Connecting the Speakers 4
Connecting Auxiliary Equipment 4

Read Me First 5
How This Manual Is Organized 5
Getting Started Right 6
Unpacking 6
Location 6
Set Up 6
1. Connect the Antenna(s) 6
2. Connect the Speakers 6
3. Put Batteries in the Remote Control 6
4. Connect a VTR or TV (Optional) 6

Common Operations 7
COMPUPLAY 7
Turning the CA-MXS2BK On 7
Turning the CA-MXS2BK Off 7
Controlling the Sound 7
Volume Control 7
Special Effects Control 7
Listening with Headphones 8
The Display and the LEDs—Two Very Useful Hints 8

Listening to the Radio 9
One Touch Radio 9
Tuning in a Station 9
Presetting Stations 9
Receiving in Stereo or Mono 9

Listening to a Compact Disc 10
Basics of Using the CD Player 10
To Load, Play, and Stop a CD 10
How to Find the Track or a Particular Point You Want 10
Locating a Track with the Remote Directly 10
Programming the Playing Order of the Tracks 10
Random Play 10
Programmed Play 11
Repeating a Selection or the Entire Disc 11

Listening to a Tape 12
Playing Back a Tape 12
Easy-to-Use Tape Control Panel 12
One Touch Play 12
Regular Play 12
Fast Left and Fast Right 13
Music Scan 13
Scan Forward 13
Scan Back 13

Listening to a VTR or TV through your CA-MXS2BK 14

Recording 14
Things to Know before You Start Recording: 14
Standard Recording 15
Recording any Sound Source to Tape 15
CD to Tape Recording 15
CD Direct Record 16
Recording a CD onto a Tape Using Auto Edit 16
Tape to Tape Recording (Dubbing) 17
How to Copy a Tape With Regular Speed Dubbing 17
High Speed Dubbing 17

How to use the Timers and Set the Clock 18
Clock Setting 18
Setting the Recording Timer 18
Sleep Timer 19

How to Use the Remote Control 20
Using the 10 Key pad 20

Care and Maintenance—General Notes 21
Compact Discs 21
Cassette Tapes 21
Tape Deck 21

Troubleshooting 22
Specifications 22

Features

Here are some of the things that make your CA-MXS2BK powerful and easy to use.

Great Sound

- To get such **great sound** from such a compact package the CA-MXS2BK has pre-programmed sound effects like **DANCE CLUB, HALL, STADIUM,** and **LIVE SURROUND** so you don't have to be a sound engineer to get great effects. **ACTIVE BASS EXTENSION** automatically works to maintain the richness and fullness of the sound when the volume level is getting lower.

Easy Operation

COMPUPLAY

- The controls and operations have been redesigned to make them very easy to use so you can spend your time listening to music.
  - With the One Touch Operation feature of JVC's new **COMPUPLAY** you can turn on the CA-MXS2BK and start the radio, the tape deck, or the CD player with a single touch.
  - Two timers, **SLEEP,** and **REC TIMER** are extremely easy to set so you can really use them.
  - The **Display area** is large and clear. It's organized so you can tell at a glance what's happening because functions light up as you use them, and blink to tell you they are ready.
  - **Auto Edit** figures out how to arrange CD tracks on a tape. When you are recording a tape from a CD, the selections aren't cut off if the tape ends before the selection does.

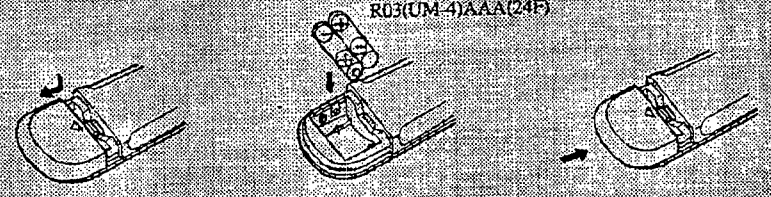
IMPORTANT CAUTIONS

1. **Installation of the Unit**
   - Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C).
   - Leave sufficient distance between the Unit and your TV.
   - Do not use the Unit in a place subject to vibrations.
2. **Power cord**
   - Do not handle the power cord with wet hands!
   - When unplugging from the wall outlet, always pull the plug, not the power cord.
3. **Malfunctions, etc.**
   - There are no user serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
   - Do not insert any metallic object into the Unit.

How to Put Batteries in the Remote Control

Match the polarity (+ and -) on the batteries with the + and - markings on the battery compartment.

R03(UM-4)AAA(24F)



CAUTION: Observe Proper Handling of Batteries

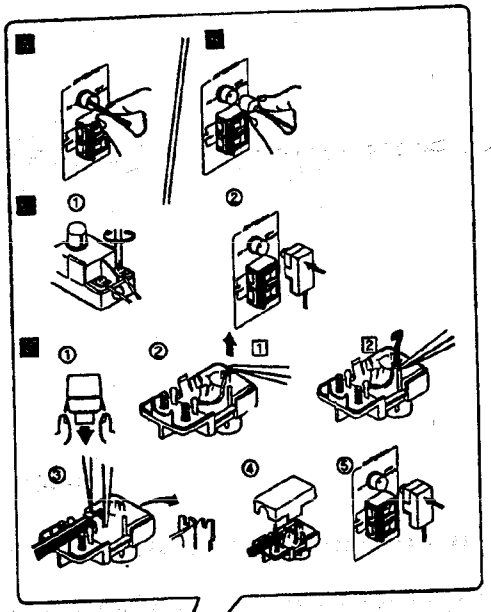
To avoid battery leakage or explosion:

- Remove batteries when the Remote will not be used for a long time.
- When you need to replace the batteries, replace both batteries at the same time with new ones.
- Don't use an old battery together with a new one.
- Don't use different types of batteries together.

Connection Diagrams and Instructions

Connecting the AM (MW/LW) and FM Antennas

FM Antenna Connections



For Germany

A Using the Supplied Wire Antenna

The FM wire antenna provided can be connected to a FM 75-ohm COAXIAL as a temporary measure.

B Using the Coaxial Type Conector (Not Supplied)

A 75-ohm antenna with coaxial type connector (DIN 45332) should be connected to the FM 75-ohm COAXIAL terminal.

For Other Countries

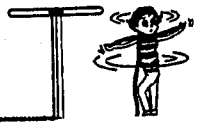
C Using the Supplied Feeder Antenna

① Attach the feeder antenna to the Antenna Adaptor as shown in the figure.
② Connect the Antenna Adaptor to the FM 75-ohm COAXIAL terminal.

D Using FM 75-ohm Antenna Cable (Not Supplied)

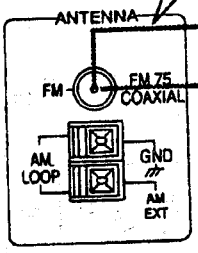
① Open the claws at both sides and remove the cover.
② Move the conductor wire from 1 to 2 using tweezers or similar tool (only when using coaxial cable).
③ Fix the coaxial cable and its core.
④ Put on the cover.
⑤ Connect the Antenna Adaptor on the FM 75-ohm COAXIAL terminal.

Note:
Make sure the antenna conductor do not touch any other terminals, connecting cords and power cord on the system.
This could cause poor reception.



For Germany
Extend the supplied wire antenna horizontally.

For Other Countries
Unfold the loops of the supplied dipole FM feeder antenna and extend them as shown.
Fasten them up in the position which gives you the best FM reception.

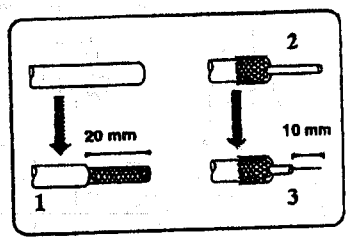


FM Feeder Antenna

Before attaching a 75 ohm coaxial lead (the kind of round wire going to an outside antenna), disconnect the supplied dipole indoor antenna.

Outside FM Antenna Wire

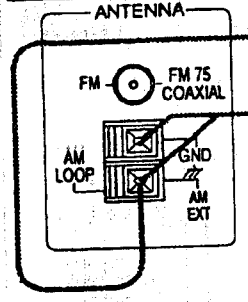
If reception is poor, connect the outside antenna.



How to Strip the 75-ohm Coaxial Cable

1. Strip back the outside covering of the 75 ohm coaxial cable to expose the braided metallic mesh.
2. Pull the mesh back and twist into a single connector as shown.
3. Strip the insulation about 10 mm back from the central wire.
4. Attach to the supplied Antenna Adaptor, as shown in the diagram above.

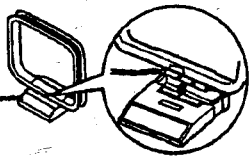
AM (MW/LW) Antenna Connections



AM (MW/LW) Antenna Wire

If reception is poor, connect the outside antenna.

Snap the tabs on the loop into the slots of the base to assemble the AM (MW/LW) loop.

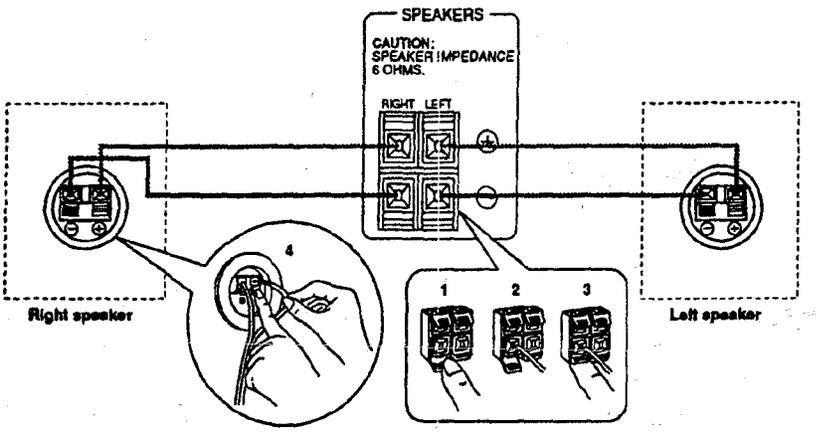


AM (MW/LW) Loop Antenna

Note: Even when connecting an outside AM (MW/LW) antenna, keep the indoor AM (MW/LW) loop connected.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Connecting the Speakers



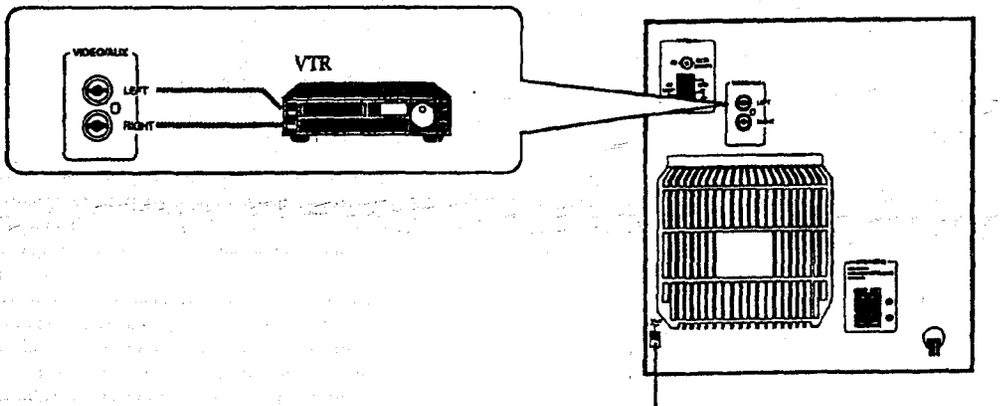
For each speaker connect one end of the speaker wire to the speaker terminals on the back of the CA-MXS2BK and one end to the speaker. On the back panel:

1. Open each terminal.
2. Insert the end of the speaker wire as shown (be sure to remove the insulation at the end of each wire first).
3. Close the terminals to clamp the speaker wires firmly in place.
4. Connect the red (+) and black (-) terminals of the right side speaker to the red (+) and black (-) terminals marked RIGHT on the CA-MXS2BK.
   Connect the red (+) and black (-) terminals of the left side speaker to the red (+) and black (-) terminals marked LEFT on the CA-MXS2BK.

IMPORTANT: Match the polarity of the speaker terminals with the polarity of the terminals on the CA-MXS2BK, red (+) to red (+) and black (-) to black (-). Check your speakers for correct impedance: Speakers 6 ohms only.

Connecting Auxiliary Equipment

VTR or TV



When recording an AM (MW/LW) broadcasting program, beat sounds may be heard and recorded. Set the BEAT CUT selector to either 1 or 2, so that beat sounds will not be heard nor recorded. (Except for Canadian model)

(No. 20399) 1-7

Read Me First

How to get the most for your money by using this manual.

The Engineers at JVC have made the CA-MXS2BK very easy to use, and if you are experienced using audio equipment, you can figure out how to use some of the CA-MXS2BK controls by yourself. However, we have built some new features into this model, which you can learn about easily from the manual.

If you are a new user or just want a review, this manual explains how to use the CA-MXS2BK and take advantage of its features for playing and recording music, as well as other sounds. One way to use this manual is to read it through now and refer back to it when you need to refresh your skills for some special operation. Of course you can just look up the topics, such as recording a CD, that you want to do, but remember that you may need to refer to other parts of the manual for some of the instruction: for instance, in explaining how to record a CD, we assume you already know how to load a CD. That's why we recommend that you read the manual through once before starting. We've made it short, and easy to follow.

However before you proceed, please read the IMPORTANT CAUTIONS on page 2 and the set-up directions.

How This Manual Is Organized

IMPORTANT!
Special features for a special Manual.

This is a special manual, designed to accommodate several languages. To keep the size from becoming too great, yet still give you a top quality instruction manual, we have incorporated some special features:

- A fold-out page to look at while you read the instructions shows the front controls of the CA-MXS2BK. Some procedures have the illustrations of which control to use right with them, and for some you will need to look at the fold-out for the illustration.
- Basic information that is the same for many different functions is grouped in one place, and not repeated in each procedure. For instance, in the section on playing a CD, we do not repeat the information about setting the volume and the sound conditioning, which are talked about in the Common Operations section.
- Names of buttons, controls and function names that light up on the display panel are written in all Capital letters like this: POWER.
- When we are talking about the Function, rather than the BUTTON or DISPLAY, then we just capitalize the first letter of the words.
- The ☞ alerts you to important information or how to solve special problems that may occur when using the CA-MXS2BK.

The column on the left of the page is a special place to make it easier to find just what you want to know about, with little headlines announcing what each part of the page is about. Sometimes illustrations and helpful hints are placed here also.
Basically we use three kinds of information to help you understand and use the CA-MXS2BK:

- ❑ Information about what you can do (such as record a CD or preset a radio station) and how the Unit is designed to make doing this activity easy.
- ❑ Procedures, usually numbered in the order you do the steps, to guide you in exactly what to do to accomplish something, such as tune a radio station or record a tape.
- ❑ Information you need to know to make decisions about which functions of the CA-MXS2BK to use for particular tasks (such as when to use Dolby NR to improve tape sound) and special hints to make your work go smoothly, like reminding you to set the sound effects before starting the CD to tape recording, since they cannot be changed once recording begins without starting completely over.

The manual has a table of contents to help you easily look up what you want to know.
We've enjoyed making this manual for you, and hope you will use it to enjoy the sound and many features built into your CA-MXS2BK.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

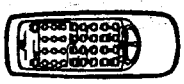
Getting Started Right

Unpacking

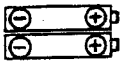
Inside the packing box....

Of course you have already opened your CA-MXS2BK carton, since you are reading this manual. Although the Unit is quite sturdy, you may want to save the packing to re-pack your CA-MXS2BK in case you are moving it some distance.
Check to be sure you have all of the following things, which are supplied with the CA-MXS2BK:

AM (MW/LW) Antenna

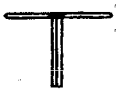


Remote Control



Batteries

FM Wire Antenna (only for Germany)



FM Feeder Antenna (except for Germany)

Antenna Adaptor (except for Germany)

If any are missing, contact your dealer immediately.

Location

Where can you put it?

You can place the CA-MXS2BK in many different kinds of locations to suit your needs; just observe the cautions on page 2: keep away from moisture and heat; leave some space between the Unit and its surroundings, more than 1 cm at the sides of the console and 10 cm at the back.

Set Up

Very little assembly required

You will need to do the following four things to get your CA-MXS2BK ready to use.

1. Connect the Antenna(s).
2. Connect the Speakers.
3. Put Batteries in the Remote Control.
4. Connect a VTR or TV (Optional).

1. Connect the Antenna(s)

Please look at the diagrams on pages 3 and 4 to do these things.

Follow the diagrams on page 3. Here's what you need to know:

- For AM (MW/LW) reception you must connect the supplied loop antenna. If reception is poor, connect the outside antenna, but leave the loop antenna in place—the AM (MW/LW) will not work correctly without it.
- For FM reception, connect the supplied wire as shown. However, if you use an outdoor antenna, disconnect the indoor FM antenna first.
- To avoid noise, keep antennas away from metallic parts of the CA-MXS2BK, connecting cords and the AC power cord.

2. Connect the Speakers

Basically, you look at the diagrams on page 4 and follow the pictured instructions.

3. Put Batteries in the Remote Control

Pay close attention to getting the batteries in correctly—we've made it very easy, just match the + and - marks on the batteries with the + and - markings on the Remote. See page 2 for instructions

> CAUTION: Handle batteries with care. See page 2 for proper use of batteries.

4. Connect a VTR or TV (Optional)

You can play the sound portion of a TV program or video tape through your CA-MXS2BK's sound system, often improving it greatly. To do this, a VTR or TV can be hooked up to play through the CA-MXS2BK Just follow the diagram on page 4.
Now you can plug the AC power cord into the wall socket, and your CA-MXS2BK is at your command!

> CAUTION: First make all connections before plugging the Unit into any AC power outlet.

Read on and find out how to use the many features built into your Unit.....

(No. 20399) 1-9

Common Operations

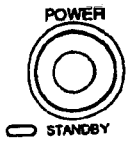
Here are the things that apply to all the functions of your CA-MXS2BK. If something in a procedure is unclear to you, check back here.

COMPUPLAY

The Magic of COMPUPLAY

COMPUPLAY is JVC's new feature that lets you control the most used functions of the CA-MXS2BK with a single touch. This One Touch Operation starts playing a CD, turns on the radio or plays a tape with a single press of the play button for that function. What One Touch Operation does for you is to turn the power on, then start the function you have called for. If the Unit is not ready, such as no CD or tape in place, the Unit still comes on and then pauses so you can put in a CD or tape.
How One Touch Operation works in each case is explained in the section about that function.

Turning the CA-MXS2BK On



Press POWER; the STANDBY indicator goes out.

- The CA-MXS2BK comes on ready to do whatever it was doing when the power was last shut off. So if the last thing you were doing was listening to a tape in deck B, you now are ready to listen to a tape again in deck B, or you can change to another source.
- If you were listening to the radio last, the radio comes on playing that last station.

Be sure to read the caution at the end of this section concerning sound levels, and possible damage to your hearing or the equipment.

Turning the CA-MXS2BK Off

Press POWER again; the STANDBY indicator lights up and the display blanks, except for the clock display.

- The small amount of the power (13 watts) is always consumed even in the stand-by mode.
- To switch off the Unit completely, unplug the AC power cord from the AC outlet.

Controlling the Sound

Making it sound the way *You* want it to:

The same set of buttons and knobs control the sound, no matter which function is producing it. Here we will briefly explain how these controls work, and how you can use them to increase your enjoyment of the music.

Volume Control

•Volume

Rotate clockwise to increase loudness, counter-clockwise to reduce loudness. Be sure to read the caution at the end of this section about high sound levels damaging your hearing or your equipment.

Special Effects Control

•LIVE SURROUND
•DANCE CLUB
•HALL
•STADIUM

The four preset special effects to condition your sound output are selected with the LIVE SURROUND MODE button located just off the right hand corner of the display. On the lower left side of the display you will see the four effects shown as LIVE-S, D. CLUB, HALL and STADIUM. The one currently selected is highlighted. Using these effects gives you control of the way your music sounds, so you can tailor it for your room and for the quality of the source. We can give you some idea of how each one affects the music, but the only way to really tell is to try them yourself. Depending on the way each recording is made, or the quality of the radio signal, they will affect different pieces differently. Feel free to experiment!

Selecting Sound Effects

- You select a sound effect by pressing LIVE SURROUND MODE to cycle through the effects until the effect you want is highlighted in the display.
- Live Surround is a special effect that can either affect the music by itself (just LIVE-S is highlighted) or affect the music in combination with one of the other three effects. When both an effect and LIVE-S are highlighted, they are on together.
- To remove only Live Surround from the effect, just press LIVE SURROUND MODE and Live Surround is turned off. The next time you press LIVE SURROUND MODE, the present sound effect is turned off, and the next one is turned on along with Live Surround.
- To turn all the effects off, including Live Surround, press LIVE SURROUND MODE until nothing is highlighted.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Things to remember about using special effects:

- Experiment with and set your special effects *before* you start recording with CD Direct or Auto Edit, because once recording starts, the special effects cannot be changed without stopping recording, and often having to start over. If you need different sound effects for each selection, use the standard recording features described on page 15, rather than Auto Edit or CD Direct.
- Each of the special effects changes the sound in a different way by changing which parts of the sound are increased or reduced. To see how each part of the sound will be changed, watch the display just as you press an effect button when music is playing. You will see a graphical display showing the effect's pattern for just a short time before the effect starts.

LIVE-S
D. CLUB
HALL
STADIUM

- **LIVE SURROUND**—With this function the sound coming from only two speakers approaches the quality of sound from four speakers.
- **DANCE CLUB**—Increases resonance and bass
- **HALL**—Adds depth and brilliance to the sound, like in a concert hall
- **STADIUM**—Adds clarity and spreads the sound, like the sound in an outdoor stadium

ACTIVE BASS EXTENSION

Active Bass Extension
This feature is designed and incorporated to reinforce the bass sound, depending on the volume level to maintain the richness and fullness of the bass. You cannot control it manually.

Listening with Headphones

A standard pair of headphones can be connected at the PHONES jack on the front panel. No sound can be heard from the speakers. **Be sure to turn down the volume before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.**

The Display and the LEDs—Two Very Useful Hints

The Display and The LEDs

- The Display Panel tells you many useful things about what your Unit is doing. Watch it as you give instructions to the CA-MXS2BK by pressing buttons.
- A few of the controls have a small light, called an LED, next to or even right on the function button or knob itself. The light comes on when the function is on, and goes out when it is not in use.

What's Next?

Now that you know how to control the sound, go on to learn how to enjoy each sound source: Tape, CD, Radio, and Connected Equipment.

Caution: Too LOUD!

CAUTION: Always set the VOLUME control to MIN before turning on a connected source such as a VTR or TV, or starting any other of the sound sources such as the radio, tape, or CD player. Otherwise, if the VOLUME control is turned up, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

(No. 20399) 1-11

Listening to the Radio

The controls for the radio are located in the Tuner section, just above the large volume control. With these controls you can browse through all the stations or use the preset function to go immediately to a particular station.

- To record from the radio, see "Recording any Sound Source to Tape," page 15.
- To set the timer to turn the radio off at a certain time, see "Sleep Timer," page 19.

First we'll explain how to tune in stations, and then how to preset the ones you listen to often.

COMPU PLAY

Radio

One Touch Radio

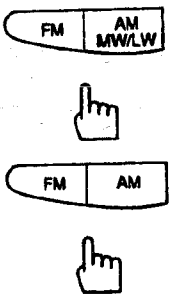
Just press AM (MW/LW) to turn on the Unit and start playing the most recent AM (MW/LW) station tuned in, or press FM to start the most recent FM station playing. If you press TUNER on the Remote instead, you can start playing the most recent station tuned in.

- ☐ You can switch from any other sound source to the radio by pressing either AM (MW/LW) or FM.

Three ways to tune in a station

Tuning in a Station

Press AM (MW/LW) or FM to turn on the radio. The display shows the frequency of the station tuned to.



You have 3 ways to select a station:

1. Press and release TUNING/TIMER < or > to move from station to station until you find the one you want.

   OR

2. Hold down TUNING/TIMER < or >, and the display cycles through all the stations one after the other. Release the button when you see the one you want.

   OR

3. Press once and release PRESET > to go to the next preset station, or hold PRESET < to cycle through the preset stations: release the button when the preset station you want shows on the display. (This method is possible after presetting stations by yourself.)

You can also use the Remote to tune in stations and preset channels:

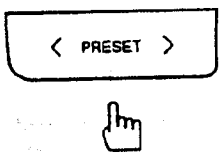
- To tune preselected stations with the Remote:
  1. Press TUNER so that you can receive the most recent station tuned in.
  2. Select the station by entering the preset channel number in the 10 Key pad of the Remote. The Display shows the new channel number and frequency.

How to preset AM (MW/LW) and FM radio stations

Presetting Stations

Once a station is assigned to a channel number, the station can be quickly tuned either from the Remote using the 10 Key pad of the Remote or the CA-MXS2BK itself using PRESET < or > to call up the channel number.

- ☐ You can preset a total of 40 stations, either AM (MW/LW), FM, or a mixture of both, at random.
- ☐ Preset stations may be erased when power is cut off to the Unit, as when it is unplugged from the AC outlet or a power failure occurs. If the preset stations are lost, simply set the stations again using the following procedure.



To preset radio stations:

1. Tune in the station you want to set.
2. Press MEMORY.
   - ☐ On the display, MEMORY will blink for 8 seconds. During these 8 seconds while MEMORY is blinking you can assign a channel number to the station and enter it into the memory.
3. Select a channel number by pressing PRESET < or > until you find the channel number you want.
4. Press MEMORY and the station will be assigned to the channel number showing on the display.

Receiving in Stereo or Mono

When an FM stereo broadcast is hard to receive or noisy:

- ☐ Press FM MODE/MUTE and reception will improve, although you will loose the stereo effect. In this state, you will hear some noise while tuning into a station.
- ☐ To restore stereo effect, press FM MODE/MUTE again so that AUTO appears in the display. In this state, when a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sound. Furthermore, in this state, you won't hear noise while tuning into stations.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Listening to a Compact Disc

COMPU PLAY
Compact Disc Play

The quickest way to start a CD is with One Touch Operation:
- ❑ Press Play/Pause ▷/II on the CD player or Play ► on the CD CONTROL section on the Remote.
- ❑ If a CD is already loaded, the Unit automatically turns on and starts to play it from track 1.
- ❑ If no CD is loaded, the CD tray opens, and you can put in a CD, printed side up, press Play/Pause ▷/II and the tray closes and the CD starts playing.
- ❑ If you press ≜ OPEN/CLOSE, the Unit automatically turns on and the CD tray comes out.

How to use the CD player: from the most basic to advanced

Basics of Using the CD Player

Here are the basic things you need to know to play a CD and locate the different selections on it. Each selection is called a track, so when we are talking about locating a track, we are also talking about how you find a certain song or performance.

To Load, Play, and Stop a CD

1. Press ≜ OPEN /CLOSE.
2. Put a CD, printed side up, into the tray.
3. If you want to listen to the CD now, press ▷/II and adjust the volume.
   - ❑ The CD tray closes automatically.
   - ❑ The display shows the track being played and the length of time since it started.
4. To stop the CD, press ■/CLEAR. When you start again, the CD begins with track 1.
5. To pause the play, press ▷/II while the CD is playing so when you press ▷/II again the CD starts just where you left off.
6. To remove a CD, press ≜ OPEN/CLOSE, take the CD out, and press ≜ OPEN/CLOSE again to close the tray. Keep the tray closed except during loading and unloading to protect the mechanism from dust and damage.

PLAY/PAUSE

CD
Find track

How to Find the Track or a Particular Point You Want

- ❑ Each time you press briefly and release SEARCH /EDIT TIME ⏮ or ⏭ the track changes by one.
  - Press and release SEARCH/EDIT TIME ⏭ to go ahead one track at a time.
  - Press and release SEARCH /EDIT TIME ⏮ to go back one track at a time.
- ❑ Holding down SEARCH/EDIT TIME ⏮ or ⏭ will fast forward or fast reverse the CD so you can quickly find the particular part of a track you want to listen to.
- ❑ Holding down ⏮ or ⏭ on the CD CONTROL section of the Remote allows you to change tracks continuously.

Using the Remote to find a track

Locating a Track with the Remote Directly

Using the 10 key pad on the Remote allows you to go directly to the beginning of any track.

1. Press CD 10 KEY.
2. Enter the number of the track you want using the 10 key pad.
   - Example: for track 5, press 5. For track 15, press +10 then 5. For track 20, press +10, then 10.
3. As long as a CD is loaded and the Unit is on, as soon as you enter the number of the track you want, it will start to play.

With programming, you can play back tracks in any order

Programming the Playing Order of the Tracks

In addition to the high quality sound which makes the CD such a good way to listen to music, you can change the order in which the tracks play.

Random Play

RANDOM

Before starting a CD, press RANDOM on the CD player.
- ❑ The tracks will play in no special order.
- ❑ When all of the tracks have been played, the CD shuts off.
- ❑ Press REPEAT before or during random play to instruct the CA-MXS2BK to continue with a different random track selection after the last selection is played.
- ❑ To cancel random play, press ■/CLEAR.

Programmed Play

Program with the Remote

You can arrange the tracks to play in any order you like with the Program function. The Remote is very useful for this because you can select tracks by number with the key pad. See "How to Use the Remote Control," page 20, if you need more information about its use. You can also use the main Unit.

How to program: just 5 easy steps

To program the CD track order from the Remote, follow this procedure:

1. Press PROGRAM.
2. Press CD 10 KEY.
3. Press the number of the first track you want to hear, then the number of the second track, and so on until you have entered all the track numbers you want to play.
   - ❑ Refer to the section "How to use the Remote Control" on page 20 if you have questions about how to enter numbers above 10.
   - ❑ Your program can include up to 32 tracks, and you can repeat tracks if you wish.
4. Press Play/Pause ▷/II to start the program—the first track you programmed will start to play, followed by the next one you entered, until all the selected tracks are played.
5. To stop the CD during Programmed Play, Press Stop ■. To cancel the program, press PROGRAM on the Remote or ■/CLEAR on the main Unit.

Programming from the front panel

To program the CD from the main Unit, follow this procedure

1. Press PROGRAM.
2. Press SEARCH/EDIT TIME ⏮ or ⏭ to locate the track you want to start with.
3. Press PROGRAM to store the selected track.
4. Repeat steps 2 and 3 until you have entered all the tracks you want to program.
5. Press Play/Pause ▷/II and the Unit will begin playing the tracks in the order you programmed them.

Programming Hints

A Few Hints to Make Programming Easier

- ❑ If you want to change the number of a track you just entered, press CANCEL on the Remote, and enter another number. (When the display shows the total program time, press CANCEL twice repeatedly to remove the last selection entered.)
- ❑ If you want to change the entire program, press ■/CLEAR on the main Unit, and then you can start over.
- ❑ To view the order of the tracks in your program when it's playing, press Stop ■ on the Remote, then press ⏮ or ⏭ on the Remote to display the order of the tracks. Each time you press ⏭ the next selection in your program is displayed. (Press ⏮ for the previous selections.)
- ❑ To add a track to your program, just press the number you want to add.

Repeating a Selection or the Entire Disc

Repeat a selection or the whole CD

- ❑ You can have either the program or the individual selection currently playing repeat as many times as you like by pressing REPEAT. Each time you press REPEAT, it cycles from OFF, which turns the REPEAT indication out on the display, to REPEAT which will repeat all tracks in order or according to the program you have set, and REPEAT 1 which will repeat the currently playing track. To cancel Repeat, just press REPEAT until the REPEAT indication on the display goes off.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Listening to a Tape

Listen to a tape: How to use your tape deck

The tape deck allows you to play, record and dub audio tapes.

- To record or dub, see Recording page 14.
- With Automatic Tape Type Detection, you can listen to type I, II, or IV tapes without changing any settings.
- To play a tape and learn about the many easy-to-use features of the dual tape deck built into your CA-MXS2BK, read on here!

Playing Back a Tape

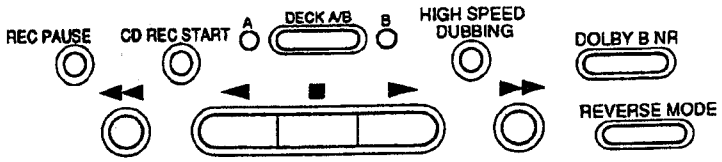
You can play a tape from either deck A or deck B, but remember: only deck B can record.

Easy-to-Use Tape Control Panel

New, Easy-to-Use Tape Control Panel

You control the tape transport functions like Play, Fast forward, Reverse, etc. from just one set of buttons. Many double cassette decks have a separate set for each cassette; but the CA-MXS2BK has one set. You press DECK A/B to select which deck, A or B, the controls will control. The LED labelled A (just to the left of the DECK A/B button) or the "B" LED (just to the right of the DECK A/B button) lights up so you know which deck the control buttons are controlling.

- When a tape is in either deck A or B, the Unit automatically detects which deck to control and makes the LED for it light up. The DECK A/B button does not function.
- When tapes are in both deck A and B, the Unit automatically selects the deck in which a tape is put later and makes the LED for it light up.
- The "A" or "B" LED only shows which deck you can control. **It never shows which deck is actually operating.** For example, the "A" LED will light up if you press DECK A/B or put a tape in deck A while you are recording on deck B.



Notice on the Remote, however, that deck A and deck B have separate control sections. So when using the Remote to control the tape deck, you don't have to select which deck the buttons control, you just use the buttons on the left for deck A and the ones on the right for deck B.

One Touch Play

COMPU PLAY

From the Remote:

By pressing Play Forward ► or Play Reverse ◄ for the deck you want to start, the power will come on, and if a tape is in the deck, it will start to play. If no tape is loaded, the Unit will come on and wait for further instructions.

From the Console Panel:

When you press Play Forward ► or Play Reverse ◄ the deck remembers which tape deck was used last, and that's the one which now comes on, and if a tape is still in it, starts playing the tape. What it actually remembers is which deck last had a tape inserted and its carrier door close, so if you last were listening to a tape in deck A, but since then have opened (with EJECT) deck B, inserted a tape and then closed it again, that's the deck that will be selected when you press Play Forward ► or Play Reverse ◄. You can override this memory by selecting which deck you want by turning on the power first and making the selection with DECK A/B.

Playback Procedure

Regular Play

When power is already on, you can use this basic procedure:

With the Remote:

1. Press EJECT, which is located just to the right of the deck, for the deck you want to use.
2. When the cassette carrier opens, put the cassette in, with the exposed part of the tape down toward the base of the CA-MXS2BK.
   - If the cassette carrier does not open, turn the Unit off, then back on again and press EJECT.
3. Close the carrier gently.
4. Turn the volume down. (See the Caution on page 8 about possible damage from setting the volume too high.)
5. Press Play Forward ► to play the front side, or Play Reverse ◄ to play the reverse side.
6. To stop playing, press Stop ■. To remove the tape, press EJECT.

From the Console Panel:

Follow the above procedure, except first use DECK A/B to select the deck with the tape you want to play if tapes are inserted in both decks.

Fast Left and Fast Right

From the Console, first select the deck with DECK A/B if tapes are in both decks. From the Remote, use the controls for the appropriate deck.

- While the tape is stopped, press Fast Left ◄◄ and the tape will wind rapidly onto the left side of the cassette without playing.
- While the tape is stopped, press Fast Right ►► and the tape will wind rapidly onto the right side of the cassette without playing.

Music Scan

Finding the place you want:
Music Scan

The Scan function is very useful, quite easy to use, and only possible from the Console Panel.
When you scan forward, the tape advances rapidly to the beginning of the next selection and starts to play it. If you want to keep looking for another selection, scan forward again and keep repeating the procedure until you find what you are looking for.
When you scan in reverse, the tape runs rapidly in the reverse direction from which it was playing until it comes to the beginning of the selection that was playing. You can now listen to the selection again, or go to the beginning of previous selection by scanning in reverse again.

- The Scan function works by detecting a 4 second blank at the beginning of each selection, so it won't work well if your tape has:
  - No blank at the beginning of a track.
  - Noise (often caused by much use or poor quality dubbing) which fills the blank with noise.
  - Long, very soft passages or pauses in a selection. The scan will detect these instead of the 4 second blanks. If this happens, just go ahead and scan again until you reach the selection you want.
- Music scan only works on one tape at a time.

Here's the procedure for scanning:

Scan Forward

Scan Forward.....

With the tape playing, to find the beginning of the next selection, press Fast Right ►► or Fast Left ◄◄ whichever one points in the *same* direction as the highlighted, slowly blinking arrow in the lower right corner of the display.

- The tape will fast forward to the next selection and begin playing it.

Scan Back

.....Scan Back

With the tape playing, to find the beginning of the selection now playing, press the Fast Right ►► or Fast Left ◄◄ button pointing the *opposite* direction from the highlighted, slowly blinking arrow in the lower right corner of the display.

- The tape will fast reverse to the beginning of the piece and start playing it again.

Useful hints and features to know about when using your tape deck

More Useful Things to Know:
•Continuous Play
•Reverse Mode
•Dolby

- **Continuous Play:** When a tape finishes playing, the Unit always checks to see if a tape is in the other deck. If one is there, it automatically starts playing it while rewinding the first tape. Continuous Play works regardless of which deck starts first.
- Use **Reverse Mode** to make the tape automatically reverse at the end of a side and start playing the other side. Press REVERSE MODE to change from Reverse Mode on, to Reverse Mode off, or from off, to on. The ⇄ is highlighted if Reverse Mode is selected. When Reverse Mode is turned off, only the central part—═—of the ⇄ in the display is lit.
  - If there is a tape in the other deck, it will start playing when both sides of the first tape have been played. As long as the Reverse Mode symbol ⇄ in the display is lit, the tapes will continue to play in the above sequence.
  - If Reverse Mode is off, the tape will play to the end of the current side, switch to the other deck and start playing a tape there while rewinding the first tape.
- Press DOLBY B NR to switch **Dolby Noise Reduction** on (DOLBY B is highlighted in the display), or if it is on, turn it off by pressing DOLBY B NR, and the DOLBY B display will dim. If a tape has been recorded with Dolby B NR, playing it back with Dolby on will reduce tape noise and improve the clarity of the sound.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈, are trademarks of Dolby Laboratories Licensing Corporation.

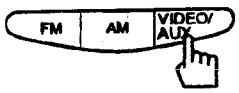
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Listening to a VTR or TV through your CA-MXS2BK

Advantages in Connecting a VTR or TV

By playing the sound from a VTR or TV through the CA-MXS2BK, you can often dramatically improve the quality, and gain control over how the music or program sounds. Once the connected equipment is playing through the CA-MXS2BK, you can apply the sound effects, make recordings, or listen with the headphones. Here are the steps to take:

1. Make a connection between the VTR or TV as shown on page 4.
   - ❑ Since there are many different types of VTRs and TVs, we can't tell you here just how to make the connections on your other equipment. However, the diagrams on page 4 will cover most cases, and you can also look in the instruction manual for the VTR or TV you have.
2. Set the Unit's volume to its lowest setting: use FADE/MUTING on the Remote, or turn the VOLUME control all the way counterclockwise.



3. Press VIDEO/AUX on either the Unit or the Remote.
   - ❑ If the Unit is off, it will turn on.
4. Turn on the VTR or TV.
5. Adjust the volume on the CA-MXS2BK.
6. To cancel VIDEO/AUX setting, change the source by starting any one of the CA-MXS2BK's built in sound sources, such as the radio or CD player.

Recording

What can you record?
- **Tapes**
- **Radio**
- **CDs**
- **Connected Source**

Recording onto cassette tape from any of the sound sources is easy and the CA-MXS2BK does most of the work. Just have a tape in deck B, have the source ready, make one or two settings, and you're ready to record.

For each source the procedure is a little different and now we'll explain just what to do for each one. If you forget, just come back to the section which has the specific procedures you need. But first, here are a few things to make your recordings better.

Things to Know before You Start Recording:

Copyright

- **It may be unlawful to record or playback copyrighted material without the consent of the copyright owner.**

Reduce Hiss—Dolby NR

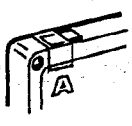
- Press DOLBY B NR (noise reduction)—DOLBY B lights up in the lower right corner of the display—to reduce tape hiss, except when dubbing from a tape which was already recorded with Dolby NR. Then it is better to leave the Dolby function off.

Recording Level

- The recording level, which is the volume at which the new tape is being made, is automatically set correctly, so it is not affected by the VOLUME control on the CA-MXS2BK. Thus, you can adjust the sound you are actually listening to without changing the recording. If you don't want to listen to the sound, you can turn the VOLUME control all the way down, or press FADE/MUTING on the Remote.

Erasure Protection

- Cassettes have a special feature so you won't accidentally record over a tape you want to save. Two small tabs on the back, one for side A and one for side B, can be removed to prevent erasure or re-recording. To record on a cassette with the tabs removed, you must cover the holes with tape first. However, when a Type II tape is used, only cover part of the hole as shown below, since the other part of the hole is used to detect the tape type.



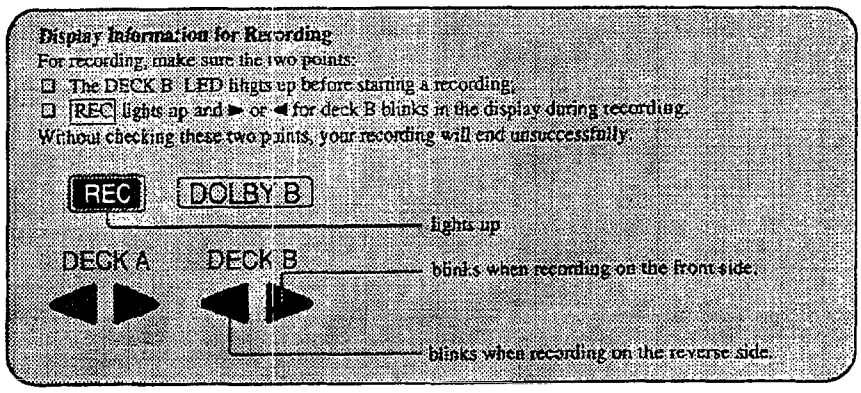
(No. 20399) 1-17

Select Sound Effects

- When recording, you can select the sound effects with the preset sound effect buttons to condition the music as it is recorded. But when recording using Auto Edit or CD Direct, once recording has started, these settings cannot be changed. When recording from tape Deck A to Deck B, the sound effects cannot be used, because the signal doesn't go through the amplifier first. This method gives you the highest quality dubbed tapes.
- Type I and type II tapes can be used for recording. While type IV tapes can be played, type IV tapes cannot be used for recording on the CA-MXS2BK.

☞ If recordings you make have excessive noise or static, the Unit may be too close to a TV which was on during the recording. Either turn off the TV or increase the distance between the TV and the CA-MXS2BK.

Important!


Display Information for Recording
For recording, make sure the two points:
☐ The DECK B LED lights up before starting a recording.
☐ REC lights up and ► or ◄ for deck B blinks in the display during recording.
Without checking these two points, your recording will end unsuccessfully.
REC
DOLBY B
lights up
DECK A
DECK B
blinks when recording on the front side.
blinks when recording on the reverse side.

Standard Recording: Any Source to Tape

Standard Recording

This is the basic method for recording any source. The CA-MXS2BK also has special ways for recording CD to tape, and tape to tape, which save you time and effort, as well as give you some special effects.
However, when you need to add a selection to a tape you have made, or are combining selections from several sources on one tape, use the method we describe here; just substitute the source you want, such as a tape in deck A, or CD, or radio in this procedure. You can also record from a connected VTR or TV with this procedure.

Source to Tape: Step by Step

Recording any Sound Source to Tape

Follow these steps to record from any sound source onto a tape in deck B.

1. Press POWER so the LED on the VOLUME control glows.
   - ☐ Press REVERSE MODE to indicate ⇄ in the display if you want to record on both sides of the tape.
2. Load the tape you are making into Deck B.
3. Press REC PAUSE.
   - ☐ REC lights up in the display.
4. Prepare the source, for example, tuning in a radio station, loading a CD, turning on a connected VTR, etc.
   - ☐ If the source is already playing, Just press REC PAUSE, then press either Play Forward ► to record on side A, or Play Reverse ◄ to record on side B.
5. When you want to start recording, press either Play Forward ► to record on side A, or Play Reverse ◄ to record on side B of the tape.
   - ☐ Hint: any time a source other than deck B is playing, you can record by putting a tape in deck B, pressing REC PAUSE, then Play Forward ► or Play Reverse ◄ to start recording that source.

CD to Tape, Introduction

CD to Tape Recording

There are three ways to record from CD to tape:

- ☐ The standard method described above.
- ☐ CD Direct Record—Everything on the CD goes onto the tape in the order it is on the CD, or according to an order you have set in a program.
- ☐ Auto Edit—Your CA-MXS2BK figures out which selections to put on which side of the tape, so a selection isn't cut off before it's finished when the tape runs out.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd,,Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

CD Direct Record

CD Direct Record, Step by Step

1. Put the tape in deck B.
2. Load a CD into the tray and press ▲ OPEN/CLOSE.
   - ☐ If you want to record on both sides of the tape, press REVERSE MODE to indicate ⇄ in the display.
3. Press CD REC START on the tape deck.
   - ☐ The Unit will automatically rewind the tape to the beginning of side A, create a 10 second blank, turn on the CD and start recording.
     - At the end of the tape, the CA-MXS2BK automatically goes back to the beginning of the last selection and re-records it, this time gently fading out at the end. If you selected the Reverse Mode, side B starts with the last selection on side A.
     - When the tape is finished, the Unit shuts off the CD and the tape deck and goes into Stand-by mode.
     - Any time during the recording process, you can interrupt by pushing either ■/CLEAR on the CD player or Stop ■ on deck B.

CD REC START

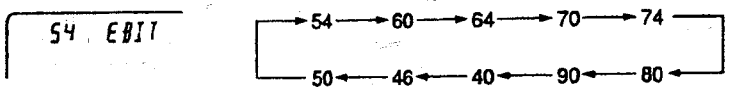
Recording a CD onto a Tape Using Auto Edit

Auto Edit, CD to tape, Introduction

Using Auto Edit, you can arrange the CD tracks to fit the tape, so a selection isn't cut off when the tape runs out first. Auto Edit is one of the best ways to copy all of a CD onto a tape.
The selection of which tracks go on which side is based on the lengths of the tracks and the length of the tape. The CA-MXS2BK can figure out most of what it needs to know, but you will have to tell it the tape size you are using if your tape is a different size than the one picked by the program. Follow this procedure to record a CD using Auto Edit.

Auto Edit, CD to tape, Step by Step

1. Put the tape in deck B.
   - ☐ Press REVERSE MODE to indicate ⇄ in the display if you want to record on both sides of the cassette.
2. Load the CD into the CD Player.
   - ☐ If the CD is already loaded, be sure the power is on.
3. Set the sound effects you want now, since the sound environment cannot be changed once recording starts.
4. Press ■/CLEAR.
   - ☐ This cancels the previous edit or program setting.
5. Press AUTO EDIT on the CD player. The system tells you the minimum standard tape length to use.
   - ☐ You can select a different length of tape, depending on the actual size of the tape you are using, from ten possibilities programmed into the CA-MXS2BK: 40, 46, 50, 54, 60, 64, 70, 74, 80, 90. Cycle through these choices using SEARCH/EDIT TIME ⏮ or ⏭ until you find the length closest to your tape's actual length.



6. Press SIDE A/B, and the display shows which tracks will go on side A and which on side B. Each time you press SIDE A/B the display switches between A and B.
7. Now press CD REC START on the tape deck.
   - ☐ The tape automatically rewinds to the beginning of side A, a 10 second blank is created, and the CD begins to play and be recorded.
   - ☐ To stop recording any time during the process, press either Stop ■ on deck B or ■/CLEAR on the CD player. But remember: after you stop, if you restart, the tape will rewind and start recording the CD from the beginning.

AUTO EDIT

SIDE A/B

CD REC START

Tape to Tape Recording (Dubbing)

Tape to Tape Dubbing, Introduction

Recording from one tape to another is called dubbing.
You can dub at regular speed for highest quality, or at high speed with a slight loss in sound quality. With high speed it takes only about one-half the time to copy a tape.

- ❑ Refer back to "Things to Know before You Start Recording" on page 14.
- ❑ Refer back to "Listening to a Tape" on page 12 if you have other questions about operating the tape deck.

How to Copy a Tape With Regular Speed Dubbing

Regular Speed Dubbing, Step by Step

1. Put the tape you want to copy *from* into deck A for playback.
2. Put the tape you want to copy *onto* into deck B for recording.
   - ❑ Anything already on the tape in deck B will be erased as the new sound from deck A is copied onto it.
3. Press REC PAUSE. Now deck B is ready to record.
4. Press Play Forward ► (or Play Reverse ◄) for deck B.
   - ❑ Deck B starts recording.
   - ❑ Make sure that no source is played this time.
5. Press DECK A/B so that the DECK A LED lights up.
6. Press Play Forward ► (or Play Reverse ◄) for deck A
   - ❑ Deck A starts playing.
7. To stop the regular dubbing, stop both deck A and B.

Important Dubbing Information

The type of tape (Normal or CrO_2) you record *from* must be the same as the type you record *onto* .

- ❑ When the tape you are recording from in deck A has been recorded with Dolby B NR, you should turn off the Dolby function by pressing DOLBY B NR on the tape deck so the indicator in the display is off.
- ❑ During regular speed dubbing you can only listen to the source tape. If you don't want to hear it, turn down the VOLUME control or press FADE/MUTING on the Remote. Only the sound you hear will be affected; the recording level is controlled automatically.
- ❑ You cannot dub using the sound effects such as DANCE CLUB, HALL, etc.

High Speed Dubbing

High Speed Dubbing, Step by Step

Although the quality of the dubbed tape is a little less, high speed dubbing is a very convenient way to record from one tape to another.

1. Put the tape you want to copy *from* into deck A, and the tape to be copied *onto* in deck B.
2. Press HIGH SPEED DUBBING on the tape deck. REC lights up in the display.
   - ❑ Both decks start, deck A playing and deck B recording.
     - If you want to dub both sides of the tape, make sure to press REVERSE MODE to indicate ⇄ in the display.
     - The sound you hear is strange because it is much faster than usual, and you may not want to listen to it. Turn it down with the VOLUME control, or press FADE/MUTING on the Remote.
     - When using high speed dubbing, you can also listen to another source such as the radio or the CD player, just as if you weren't dubbing.
     - During high speed dubbing, if you listen to a CD with Auto Power Off turned on, the whole Unit, including the tape decks, may turn off when the CD ends.

Recording selections from several different tapes

When you want to take selections from several different tapes and combine them on one tape during high speed dubbing, follow these steps whenever changing tapes in deck A:

1. Press DECK A/B to make the DECK A LED light up.
2. Press Stop ■.
   - ❑ This causes deck A to stop, so you can change tapes, while deck B makes a 4 second blank and pauses.
2. Change the tape in deck A.
3. Press HIGH SPEED DUBBING to start deck A playing and deck B recording again. REC lights up in the display.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

How to use the Timers and Set the Clock

Two Timers:
•Record
•Sleep

The timers let you control recording and playing functions automatically. With the CA-MXS2BK they are particularly easy to set and use. Two types of timers are available:

- ❑ **Rec Timer**—unattended recording of radio broadcasts. You can set the starting time and recording duration.
- ❑ **Sleep Timer**—Fall asleep and have your CA-MXS2BK turn off automatically after a certain length of time.

NOTE: follow the procedure, step by step.

Whenever you are setting the clock or the timers, you will cancel the setting mode by pressing any other button than the one specified in the procedure. So be careful to finish the entire procedure before starting any other function, or you will have to start over.

Clock Setting

IMPORTANT!
Set your clock!

The timers depend on the clock: If the clock is right, the timers will work like you expect, but if the time is incorrect on the clock then the timers will also be incorrect.

- ❑ Clock setting is possible with the Unit either on or off.

Special Notice: The clock must be set, or the timers cannot be set!
So, let's set the clock first.

1. Press CLOCK ADJUST. (During setting, CLOCK in the display flashes.)
2. Now you are ready to set the *hour* by pressing TUNING/TIMER<or>: Press > to advance the hour, and < to decrease the hour. Each time you press TUNING/TIMER<or>, the hour changes by one. Hold the button down, and the clock will change one hour at a time as long as it is held down.
3. Press MEMORY and the hour showing in the display will be set, and the minutes digits will start to flash.
4. Now you are ready to set the *minutes* by pressing the same button, marked TUNING/TIMER < or >: Press > to advance the minutes, and < to decrease the minutes. Each time you press TUNING/TIMER < or > the minutes change by one. Hold the button down, and the clock will change rapidly in ten minute intervals (10,20, 30, etc.) as long as it is held down.
5. Press MEMORY again and the clock is set and starts from the hour and minute showing on the display.

☞ If there is a power failure, the clock looses its setting, the display shows "0:00" and it must be reset

Recording when you're not there

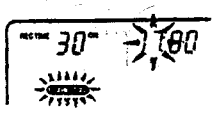
Setting the Recording Timer

With the recording timer you can make a tape of a radio broadcast automatically whether or not you are there to start the CA-MXS2BK. For the timer to work correctly, you need to make sure of two things in addition to setting the time for the radio and tape recorder to come on:

- ❑ The tape you want to record onto must be in deck B.
- ❑ The radio station whose program you want to tape must be the last one played before timer comes on.
- ❑ Setting the Recording Timer is possible with the Unit either on or off.

Follow this procedure to set the Recording Timer:

1. Press REC TIMER— REC TIMER flashes in the display. As long as it is flashing, you can continue with the setting process. If you wait too long, and it stops before you are done, just press REC TIMER twice and start over.
2. Set the time you want the radio to come on and the tape in deck B to start recording.
   - ❑ Just like setting the clock above: set the hour with TUNING/TIMER < or > , press MEMORY, set the minutes with TUNING/TIMER < or >, press MEMORY. The time to start recording is now set, and you are ready to set the length of time for the recording.
3. To set the length of time for the recording:
   - ❑ Each time you press the TUNING/TIMER < or > button, the duration increases by one minute. If you hold the button down, it will advance in ten minute increments up to 120 minutes, which is the maximum time you can set.



4. Press MEMORY again, or wait eight seconds, and the Unit will memorize the setting.
   - ☐ The REC TIMER indication in the display will stop flashing and be highlighted. The unit will now turn on at the set time and record the last station set when it was last turned off.
   - ☐ Notice that the REC TIMER indicator is lighted up on the display whenever the Recording Timer is set.
   - ☐ At the end of the set length of time the radio and deck B will shut off.
   - ☐ If you set no time, but leave the display showing —:—, the CA-MXS2BK will not shut off, but keep playing until you shut it off

REC TIMER

5. Whenever REC TIMER is lit on the display, you can press REC TIMER to turn it off. Although the timer will no longer come on and make a recording, the times you have set are stored in memory, and unless the Unit is disconnected from the power source, you can recall your settings by pressing REC TIMER again. To completely erase the settings, program another setting over the previous setting.

> ☞ It is very easy, and can be very disappointing, to forget to put in a tape, or to accidentally leave a tape in deck B you don't want recorded over. Although this happens to almost everyone sometimes, we hope it won't happen to you!
>
> ☞ When the recording timer switches the CA-MXS2BK on, the volume coming out of the speakers is controlled by the VOLUME control, so set it to MIN if you will be out or sleeping during the recording.

Sleep Timer

Sleep Timer: turns the Unit off automatically after a set time

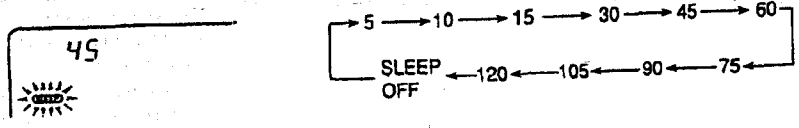
Use the sleep timer to turn the Unit off after a certain number of minutes when it is playing. Using this timer, you can fall asleep to music and know your CA-MXS2BK will turn off by itself rather than play all night.

- ☐ You can only set the Sleep Timer when the CA-MXS2BK is on and a source is playing.
- ☐ To cancel the Sleep Timer setting simply press SLEEP TIMER until the SLEEP indication disappears from the display. Turning off the Unit also cancels the Sleep Timer.

To set the Sleep Timer follow this procedure:

SLEEP TIMER

1. With the CA-MXS2BK on and a source playing, press SLEEP TIMER. The SLEEP indicator in the display will start blinking.
2. Set the length of time you want the source to play before shutting off with this procedure:
   - ☐ Each time you press SLEEP TIMER while the SLEEP indication is blinking, it changes the number of minutes shown in the display in this sequence:



   - ☐ The actual time when the CA-MXS2BK will shut off shows in the right hand corner of the display where the clock time is usually displayed.
   - ☐ When the number of minutes you want shows in the display, just wait 8 seconds until the indicator stops blinking, but remains lighted.

The Unit will now turn off after the number of minutes you have set.

> ☞ When the Recording Timer setting and Sleep Timer setting overlap, the former always has the priority. When the former timer starts activating, the latter will be cancelled.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

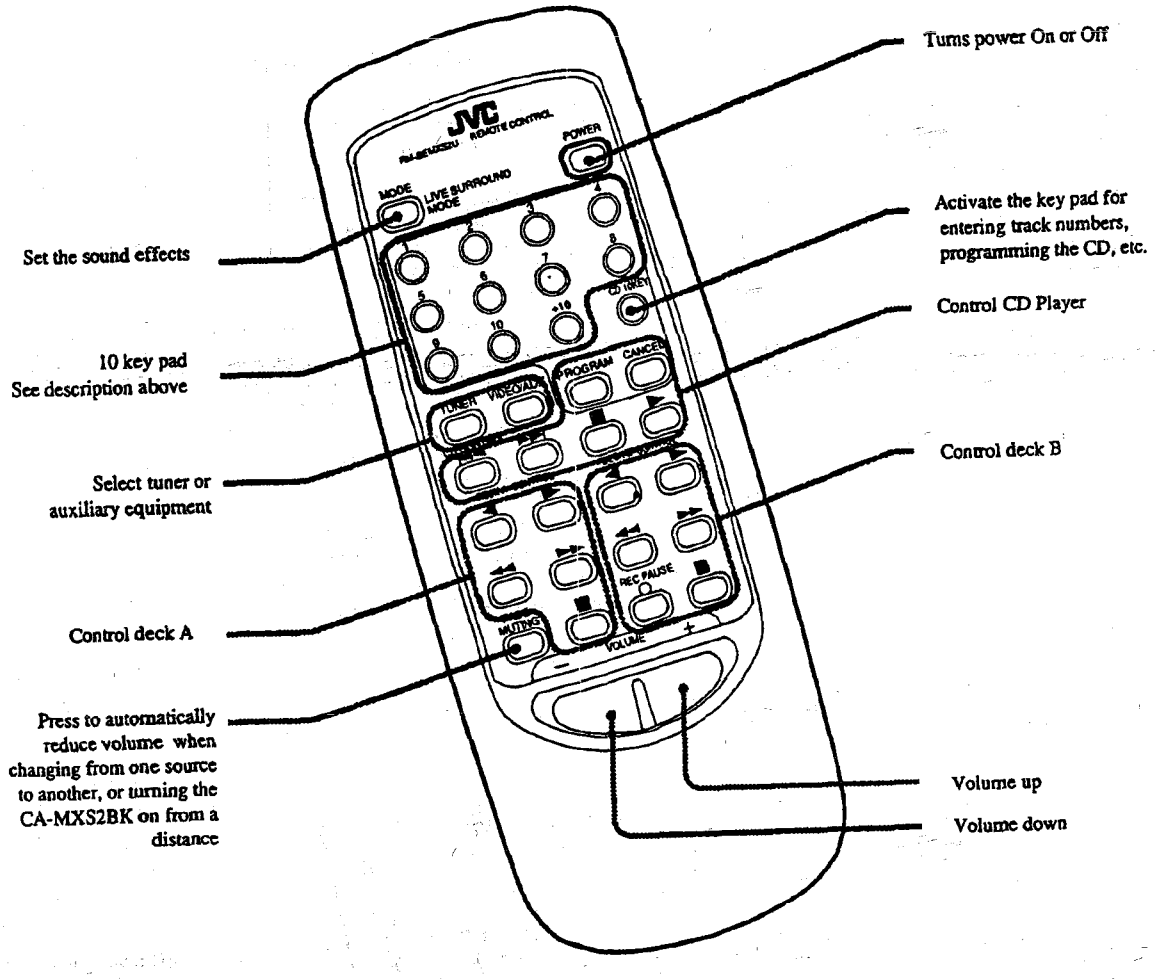
How to Use the Remote Control

The Remote Control makes it easy to control many of the functions of the CA-MXS2BK from a distance of up to 20 feet away. You do need to point the remote sensor at the CA-MXS2BK console.
Most of the buttons on the Remote Control do just what the ones on the front of the CA-MXS2BK do, and they are explained in the manual. A few functions are available only by using the Remote Control, and those are described below.

Using the 10 Key Pad

The 10 Key pad is used to specify a CD track or the number you have assigned to a preset radio station. To enter a number using the key pad follow these steps:

- When you use the 10 key pad for CD player, first press CD 10 KEY; when for the tuner, first press TUNER before pressing any 10 key.
- For numbers between 1 and 10, just press the button with the number you want.
- For numbers from 11 to 20, first press the +10 key, then the one's digit of the number you want—to get 15, first press +10, then 5. For 20 press +10 and 10 .
- For numbers from 21 to 30, press the +10 key twice; then press the one's digit—to get 25, press +10 +10 and 5 . For 30, press +10 +10 and 10
- For numbers from 31 and 40, follow the same procedure, only press the +10 key three times, then the one's digit—to get 32, press +10 +10 +10 and 2.

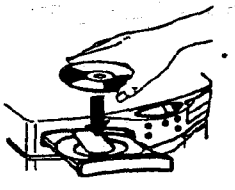


Care and Maintenance—General Notes

Compact Discs

Handle your compact discs, cassette tapes, and tape deck carefully, and they will last a long time.

- Remove the CD from the case by holding it at the edges while pressing the center hole lightly.
- Do not touch the shiny surface of the CD, or bend the CD.



- Place the CD into the open tray with the label facing up.

- Put the CD back in its case after use to prevent warping.
- Be careful not to scratch the surface of the CD when placing it back in the case.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.

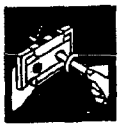
- A dirty CD may not play correctly. If a CD does become dirty, wipe it with a soft cloth in a straight line from center to edge.

CAUTION: Do not use any solvent (for example, conventional record cleaner, spray, thinner, benzine, etc.) to clean a CD.

In general, you will have the best performance by keeping your tapes, CDs, and the mechanism clean.

- Store tapes and CDs in their cases, and keep them in cabinets or on shelves.
- Keep the tape deck tape carriers and the CD tray closed when not in use.

Cassette Tapes



- If the tape is loose in its cassette, take up the slack by inserting a pencil in one of the reels and rotating.
- If the tape is loose it may get stretched, cut, or caught in the cassette.

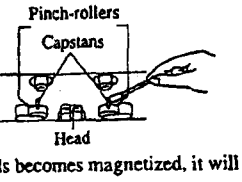
- Do not touch the tape surface.

- Do not store the tape:
  -In dusty places
  -In direct sunlight or heat
  -In moist areas
  -On a TV or speaker
  -Near a magnet

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Tape Deck

- If the heads, capstans, and pinch-rollers of the tape deck become dirty, the following will occur:
  -Impaired sound quality
  -Discontinous sound
  -Fading
  -Incomplete erasure
  -Difficulty recording
- Clean the heads, capstans, and pinch-rollers using a cotton swab moistened with alcohol.



- If the heads becomes magnetized, it will produce noise or loose high frequencies.
- To demagnetize the heads, turn off the system, and use a head demagnetizer (available at electronics and record shops).

Troubleshooting

- If you are having a problem with your CA-MXS2BK, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

Symptom	Possible Cause	ACTION
No sound is heard.	Connections are incorrect, or loose.	Check all connections and make corrections. (See pages 3 and 4.)
Impossible to record.	Cassette record protect tabs are removed.	Cover holes on back edge of cassette with tape.
Hard to listen to broadcasts because of noise.	The antenna is disconnected.	Re-connect the antenna securely.
	The loop antenna is too close to the system.	Change the position and direction of the loop antenna.
	The feeder antenna is not properly extended and positioned.	Extend feeder antenna at the best reception position.
The CD sound is discontinuous.	The CD is scratched or dirty.	Clean or replace the CD.
Unable to operate the Remote.	The path between the Remote and the sensor on the Unit is blocked.	Remove the obstruction.
	The batteries are discharged.	Replace the batteries.
The CD tray cannot be operated.	The main AC power cord is not plugged in.	Plug in the AC power plug.
The CD does not play.	The CD is upside down.	Put the CD in with the label side up.
Operations are disabled.	The built in microprocessor may malfunction due to external electrical interference.	Unplug the system then plug it back in.
The cassette carrier cannot be opened.	The system was turned off because the timer was operated while the tape was running.	Turn On the system.

Specifications

Amplifier
Output Power (IEC 268-3/DIN)
25 watts per channel, min. RMS, both channels driven, into 6 ohms at 1 kHz with no more than 0.9% total harmonic distortion.

25 watts per channel, min. RMS, both channels driven, into 6 ohms from 60 Hz to 20 kHz, with no more than 0.9% total harmonic distortion. (only for Canada)

Input Sensitivity/Impedance (1 kHz)
VIDEO/AUX 300mV/50 kohms

Speaker terminals
Speakers 6 ohms

Tape deck
Frequency response
CrO_2: 30 ~ 16,000 Hz
Normal: 30 ~ 15,000 Hz
Wow and Flutter
(WRMS) 0.09%
(DIN) 0.2%

Tuner
FM Tuner
Tuning Range 87.5 ~ 108.0 MHz
Usable Sensitivity 0.95 µV/75 ohms (10.8 dBf)
Signal-to-Noise Ratio
(IHF-A weighted) MONO (at 85 dBf) 80 dB
STEREO (at 85 dBf) 73 dB
(DIN) MONO 72 dB
STEREO 64 dB

AM (MW/LW) Tuner
MW-Tuning Range 530 ~ 1,710 kHz (only for Canada)
522 ~ 1,629 kHz (except for Canada)
LW-Tuning Range (except for Canada)
144 ~ 290 kHz (only for Italy)
144 ~ 353 kHz

Compact Disc Player
Dynamic Range (1 kHz) 90 dB
Signal-to-Noise Ratio 95 dB
Wow and Flutter Unmeasurable

General
Power Requirements For Canada: 120 V AC, 60 Hz
For Europe: 230 V AC, 50 Hz
Power Consumption For Canada: 95 Watts, 120 VA
For Europe: 110 Watts
Dimensions (Approx.) 245 x 265 x 344.5 mm (W/H/D)
($9^{3}/_{4}$ x $10^{1}/_{2}$ x $13^{9}/_{16}$ in.)
Weight (Approx.) 7 kg (15.4 lbs)

Supplied Accessories
FM wire antenna (1) (only for Germany)
FM feeder antenna (1) (except for Germany)
AM (MW/LW) loop antenna (1)
Remote control (RM-SEMXS2U) (1)
Batteries R03(UM-4)/AAA(24F) (2)
Antenna adaptor (1) (except for Germany)

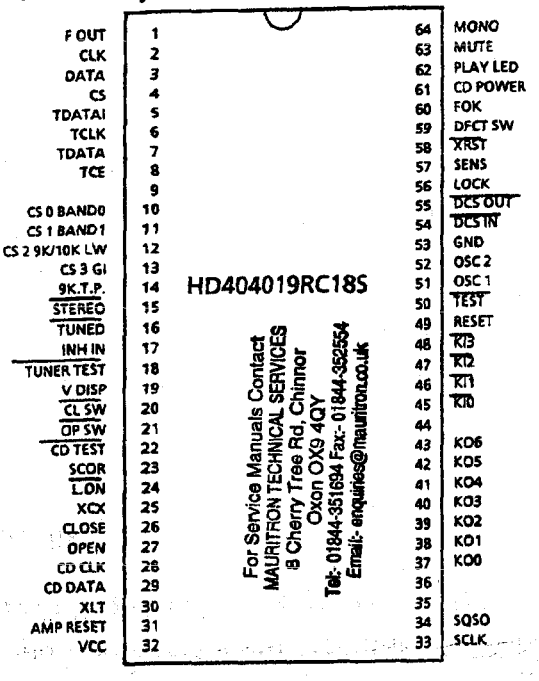
Design and specifications subject to change without notice.

(No. 20399) 1-25

Description of Major LSIs

■ HD404019RC18S(IC801) : CD/TUNER controller

1. Terminal Layout



2. Key Matrix

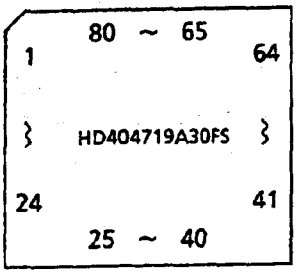
	KEY I0 (PIN 45)	KEY I1 (PIN 46)	KEY I2 (PIN 47)	KEY I3 (PIN 48)
KEY O0 (PIN 37)	RANDOM	–	SLEEP	REC TIMER
KEY O1 (PIN 38)	JUST EDIT	FM	–	CLOCK ADJ
KEY O2 (PIN 39)	REPEAT	AM	–	FM MODE MUTE
KEY O3 (PIN 40)	SIDE A/B	TUN V	–	MEMORY
KEY O4 (PIN 41)	PROGRAM	TUN Λ	PRESET <	–
KEY O5 (PIN 42)	⏮	▶ II	PRESET >	–
KEY O6 (PIN 43)	⏭	■	⏏	–

3. Terminal Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	F OUT	O	Frequency output (TP801)	28	CD CLK	O	Clock for data transmission
2	CLK	O	Clock to transmit data to IC802 (FL driver)	29	CD DATA	O	Serial data for signal processor of cd
3	DATA	O	Data output to IC802 (FL driver)	30	XLT	O	Latch signal for data transmission
4	CS	O	Chip select signal to IC802	31	AMP RESET	O	Reset signal to IC901
5	TDATAI	I	Data from IC102	32	VCC	–	Power supply
6	TCLK	O	Clock to transmit data to IC102	33	SCLK	O	Clock output for SQSO transmission
7	TDATA	O	Data output to IC102	34	SQSO	I	Input of Q-data of subcode
8	TCE	O	Chip select signal to IC102	35,36	–	–	Connected to GND
9	–	–	Connected to GND	37~43	KO0~KO6	O	Key matrix (out)
10	CS 0 BAND0	–	Tuner chip select	44	–	–	Connected to GND
11	CS 1 BAND1	–	Tuner chip select	45~48	KI0~KI3	I	Key matrix (in)
12	CS 2 9K/10K LW	–	Tuner chip select	49	RESET	I	Reset signal input
13	CS 3 GI	–	Tuner chip select	50	TEST	–	Pulled up
14	9K.T.P.	–	Test mode terminal	51	OSC 1	I/O	Oscillation terminal
15	STEREO	I	Input for 'STEREO' indication	52	OSC 2	I/O	Oscillation terminal
16	TUNED	I	Input for 'TUNED' indication	53	GND	–	GND
17	INH IN	I	Inhibition signal	54	DCS IN	I	Compulink signal input
18	TUNER TEST	–	TEST mode terminal (TP801)	55	DCS OUT	O	Compulink signal output
19	VDISP	–	Connected to GND	56	LOCK	I	Input terminal for LOCK signal
20	CL SW	I	'L' with the tray closed	57	SENS	I	Input terminal for SENS signal
21	OP SW	I	'L' with the tray opened	58	XRST	O	Reset signal output
22	CD TEST	–	TEST mode terminal (T.P.2)	59	DFCT SW	O	'H' with focus searching
23	SCOR	I	Subcode synchronizing signal is input	60	FOK	I	Input terminal for focus ok signal
24	L.ON	O	Laser control signal	61	CD POWER	O	Power control signal to CD section
25	XCX	O	'H' with tracking loop off.	62	PLAY LED	O	Output terminal for indication of cd
26	CLOSE	O	'H' with the tray closing	63	MUTE	O	Muting signal to TUNER section
27	OPEN	O	'H' with the tray opening	64	MONO	–	Not used.

■ HD404719A30FS (IC901) : System controller

1. Terminal Layout



2. Key input

IN1	IN2	IN3	IN4	IN5	IN6	IN7
A CrO_2	REV REC	–	POWER	–	◀◀	DOLBY B
B CrO_2	FWD REC	–	LIVE-S	–	◀	REV. MODE
A PACK	B PACK	–	AUX	–	■	CD D REC
–	–	–	–	–	▶	H.S.D.
–	–	–	–	–	▶▶	REC P
–	–	–	–	–	–	A/B

3. Terminal Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	IN1	I	Detecting buttons and switches	41	BFR	O	Reel motor control signal (forward)
2	IN2	I	Detecting buttons and switches	42	BRR	O	Reel motor control signal (reverse)
3	PRT	I	Input from protector circuit	43	BRC	O	Cam motor control signal (counterclockwise)
4	AD GND	–	Ground for A/D converter	44	BFC	O	Cam motor control signal (clockwise)
5	AMP RESET	I	Reset signal from IC801	45	AFR	O	Reel motor control signal (forward)
6	OSC1	–	Oscillasion terminal	46	ARR	O	Reel motor control signal (reverse)
7	OSC2	–	Oscillasion terminal	47	ARC	O	Cam motor control signal (counterclockwise)
8	L GND	–	GND	48	AFC	O	Cam motor control signal (clockwise)
9	–	–	Connected to GND	49	–	–	Connected to GND
10	–	–	Connected to GND	50	ASC2	I	Input of mechanism information (deck A)
11	$\overline{TEST}$	–	Connected to +5V	51	ASC1	I	Input of mechanism information (deck A)
12	+5V	–	Power supply	52	ACS0	I	Input of mechanism information (deck A)
13	$\overline{DCS\ IN}$	I	Compulink signal input	53	BCS2	I	Input of mechanism information (deck B)
14	$\overline{DCS\ OUT}$	O	Compulink signal output	54	BCS1	I	Input of mechanism information (deck B)
15	FADE	O	Fade recording control	55	BCS0	I	Input of mechanism information (deck B)
16	BIAS	O	Bias circuit control (on / off)	56	SMT	O	Muting control
17	ACAP	O	Drive signal for the capstan motor(A)	57	–	–	Connected to GND
18	BCAP	O	Drive signal for the capstan motor (B)	58	–	–	Connected to GND
19	AMC	O	Speed control signal for deck A	59	–	–	Connected to GND
20	BMC	O	Speed control signal for deck B	60	–	–	Connected to GND
21	APLS	I	Input of reel pulse (Deck A)	61	RMIN	I	Input from remote signal detector
22	BPLS	I	Input of reel pulse (Deck B)	62	SP CLK	O	Clock output to IC803
23	RMT	O	Recording mute control	63	SPDATA	O	Data output to IC803
24	NR	O	Noise reduction control	64	CS	O	Chip select signal to IC803
25	NR REC	O	Mode conrol of NR (REC/PLAY)	65	MSI	I	Blank detection terminal for music scanning
26	$\overline{H.S.D.}$	O	Control signal for high-speed dubbing	66	CLK	O	Clock output to IC403 (Tone selector)
27	$\overline{PBCR}$	O	Playback equalizer control	67	STB	O	Strobe output to IC403 (Tone selector)
28	–	–	Connected to +5V	68	DATA	O	Data output to IC403 (Tone selector)
29	LC	O	Rec. EQ control (Normal speed : CrO_2)	69	POWER	O	Power control (Power on/off)
30	HC	O	Rec. EQ control (High speed : CrO_2)	70	SPK	O	Speaker relay control
31	HN	O	Rec. EQ control (High speed : Normal)	71	VOL DOWN	O	Master volume control
32	$\overline{BCR}$	O	'L' when using high position tape	72	VOL UP	O	Master volume control
33	–	–	Connected to +5V	73	A PLAY	O	'H' with deck A playing
34	–	–	Connected to +5V	74	PB MUTE	O	Muting control for cassette decks
35	–	–	Connected to +5V	75	AD VCC	–	+5V
36	A LED	O	Indication signal	76	IN3	–	Connected to GND
37	B LED	O	Indication signal	77	IN4	I	Detecting buttons and switches
38	STB-BY	O	Indication signal	78	IN5	–	Connected to GND
39	–	–	Connected to +5V	79	IN6	I	Detecting buttons and switches
40	VOL.IND	O	Indication signal	80	IN7	I	Detecting buttons and switches

4. Terminal Description

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
2	FSW	O	Non connection
3	MON	O	Output for spindle motor ON / OFF control.
4	MDP	O	Output for spindle servo control.
5	MDS	O	Output for spindle servo control (Non connection).
6	LOCK	O	This terminal is "H" when the GFS signal sampled at 460Hz is "H". It turns "L" when the GFS signal turns out "L" 8 or more times in succession.
7~9	—	—	Non connection
10	TEST	I	Test pin (Normally at 0V)
11	PDO	O	Output of charge pump for analog EFM PLL (Non connection).
12	Vss	—	GND
13~16	—	—	Non connection
17	VCKI	I	Clock input from external VCO for vari-pitch control.fc = 16.9344MHz.
18	FILO	O	Output of filter for masterPLL (Slave = Digital PLL)
19	FILI	I	Input to filter for master PLL.
20	PCO	O	Output of charge pump for master PLL.
21	AVss		Analog GND
22	CLTV	I	VCO control voltage input for master PLL.
23	AV_{DD}	—	Analog power supply
24	RF	I	EFM signal input
25	TEST2	I	TEST pin (Connected to GND)
26	TEST3	I	TEST pin (Connected to GND)
27	ASYO	O	EFM full-swing output
28	TEST4	I	TEST pin (Connected to GND)
29	NC	—	Non connection
30	PSSL	I	Input used to switch the audio data output mode."L" for serial output,"H" for parallel output.
31	WDCK	O	D / A interface for 48-bit slot. Word clock f = 2Fs.
32	LRCK	O	D / A interface for 48-bit slot. LR clock f = Fs.
33	V_{DD}	—	Power supply
34	DA16	O	Output DA16(MSB) when PSSL = 1 or serial data from 48-bit slot(2's completements,MSB first) when PSSL = 0.
35	DDA15	O	Output DA15 when PSSL = 1 or bit clock from 48-bit slot when PSSL = 0.
36~51	—	—	Non connection
52	VSS	—	GND
53	XTAI	I	Input to 16.9344MHz Xtal oscillation circuit or 33.8688MHz input.
54	XTAO	O	Output of 16.9344 MHz Xtal oscillation circuit.
55	XTSL	I	Xtal selection input pin. "L" for 16,344MHz Xtal, "H" for 33.8688 MHz Xtal.
56~58	—	—	Non connection
59	MD2	I	Digital-Out ON/OFF control. "H" for ON, "L" for OFF.
60	DOUT	O	Digital-Out output pin.
61	EMPH	O	H : emphasis on L : emphasis off
62	—	—	Non connection
63	SCOR	O	Turns "H" when subcode Sync S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for reading SBSO.
66	SQSO	O	Outputs 80-bit Sub Q and 16-bit PCM peak-level data.
67	SQCK	I	Clock input for reading SQSO.
68	MUTE	I	"H" for muting, "L" for release.
69	SENS	O	SENS output to CPU.
70	XRST	I	System reset. "L" for resetting.
71	DATA	I	Inputs serial data from CPU.
72	XLAT	I	Latches serial data input from CPU at falling edge.
73	V_{DD}	—	Power supply(+ 5V)
74	CLOK	I	Inputs serial data transfer clock from CPU.
75	SEIN	I	Inputs SENSE from SSP.
76	CNIN	I	Inputs track jump count signal.
77	DATO	O	Outputs serial data to SSP.
78	XLTO	O	Latches serial data output to SSP at falling edge.
79	CLKO	O	Outputs serial data transfer clock to SSP.
80	MIRR	I	Inputs mirror signal to be used by auto sequencer when jumping 128 or more tracks.

■ CXA1372S (IC703) : RF SIGNAL PROCESSING SERVO AMPLIFIER

1.Outline

The CXA1372S is a bipolar IC developed for RF signal processing (focus OK, mirror, defect detection, EFM comparator) and servo control.

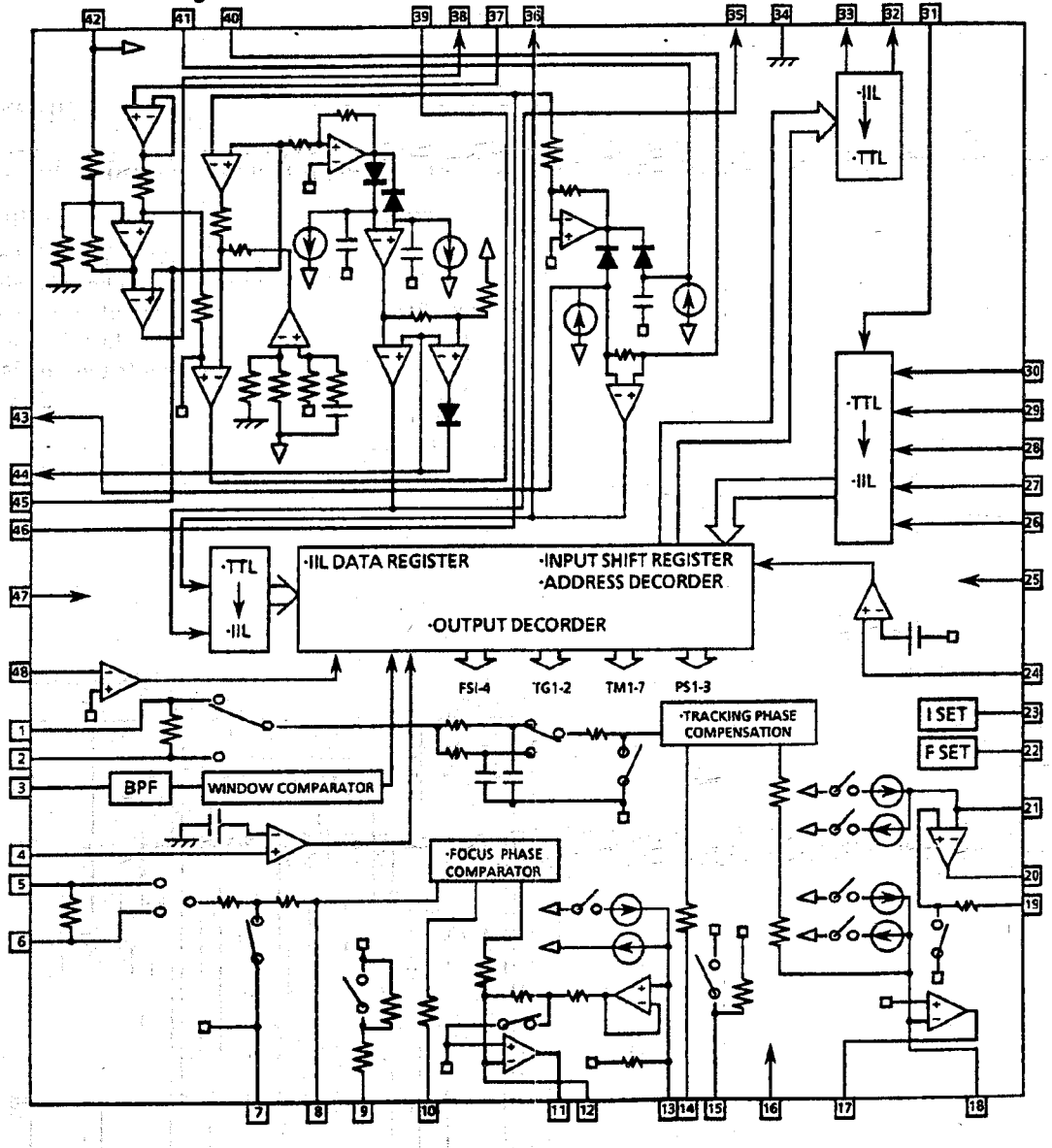
2.Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defects detection, counter measures circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Feed servo control

3.Terminal Layout

TE	1	48	TZC
TDFCT	2	47	DVEE
ATSC	3	46	RFO
FZC	4	45	RFI
FE	5	44	CP
FDFCT	6	43	CB
VC	7	42	DVCC
FGD	8	41	CC2
FS3	9	40	CC1
FLB	10	39	FOK
FEO	11	38	EFM
FE−	12	37	ASY
SRCH	13	36	DFCT
TGU	14	35	MIRR
TG2	15	34	DGND
AVCC	16	33	SENS
TAO	17	32	C.OUT
TA−	18	31	XRST
SL+	19	30	DATA
SLO	20	29	XLT
SL−	21	28	CLK
FSET	22	27	LOCK
ISET	23	26	DIRC
SSTOP	24	25	AVEE

4.Internal Block Diagram



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

5.Terminal Functions

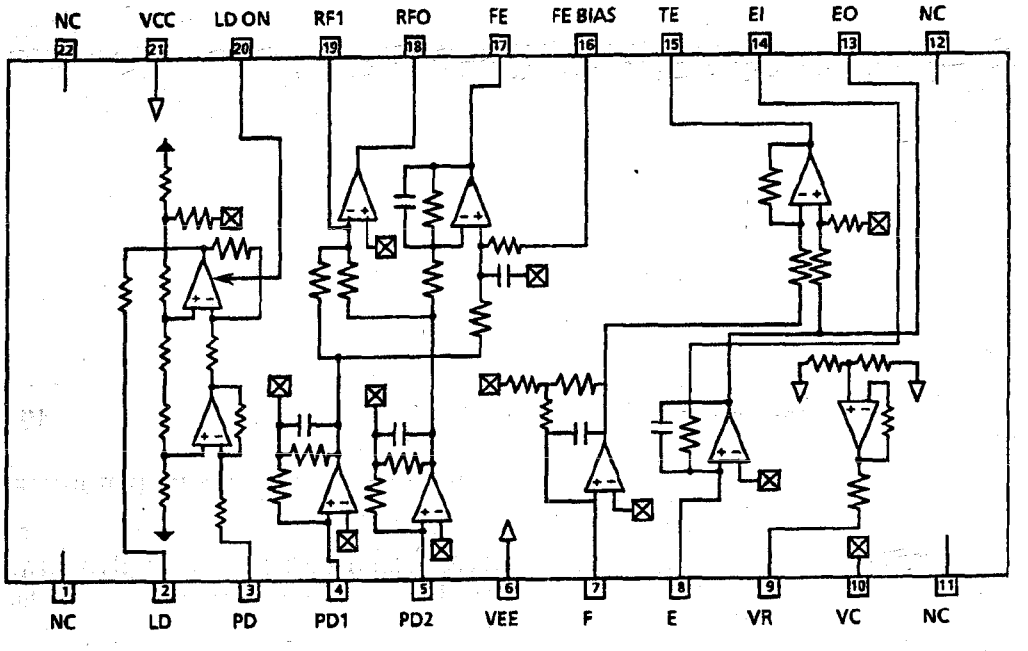
Pin No	Symbol	I/O	Function
1	TE	I	Input pin of tracking error amplifier.
2	TDFCT	I	Capacitor connecting pin for time constant during defects.
3	ATSC	I	Window comparator input pin for ATSC detection.
4	FZC	I	Pin for focus zero-cross comparator input.
5	FE	I	Input pin of focus error.
6	FDFCT	I	Capacitor connecting pin for time constant during defect functions.
7	VC	I	Center voltage input pin. For dual power: GND For single power supply: (VCC + GND)/2
8	FGD	I	Connect a capacitor between this pin and pin3 to reduce high-frequency gain.
9	FS3	I	The high-frequency gain of the focus servo is switched through FS3 ON and OFF.
10	FLB	I	Time constant external pin to raise the low bandwidth of the focus servo.
11	FEO	O	Focus drive output.
12	FE-	I	Inverse input for focus amplifier.
13	SRCH	I	Time constant external pin for formation of focus search waveform.
14	TGU	I	Time constant external pin for the selection of tracking high band gain.
15	TG2	I	Time constant external pin for the selection of tracking high band gain.
16	AVCC	–	Power supply
17	TAO	O	Tracking drive output.
18	TA-	I	Inverse input pin for tracking amplifier.
19	SL+	I	Non- inverse input pin for feed amplifier.
20	SLO	O	Feed drive output.
21	SL-	I	Inverse input pin for feed amplifier.
22	F SET	I	Pin to set peak frequency of focus tracking phase compensation and fo of CLV LPF.
23	I SET	I	Current is input to determine focus search, track jump, and feed kick height.
24	S STOP	I	Limit SW ON/OFF signal detection pin for disc inner periphery detection.
25	AVEE	–	– 5V
26	DIRC	I	Pin for one-track jump. Contains 47kΩpull-up resistor.
27	LOCK	I	At "L" feed runaway prevention circuit operate. Contains a 47kΩpull-up resistor.
28	CLK	I	Serial data transfer clock input from CPU.
29	XLT	I	Latch input from CPU.
30	DATA	I	Serial data input from CPU.
31	XRST	I	Reset input pin, reset at "L".
32	C.OUT	O	Track number count signal output.
33	SENS	O	Outputs FZC, AS, TZC and S STOP through command from CPU.
34	DGND	–	GND
35	MIRR	O	MIRR comparator output pin.
36	DFCT	O	Output pin of DEFECT comparator.
37	ASY	I	Input pin of auto asymmetry control.
38	EFM	O	Output pin of EFM comparator.
39	FOK	O	Output pin of FOK comparator.
40	CC1	I	Output pin of DEFECT bottom hold.
41	CC2	O	Input pin for the capacitance coupled output of DEFECT bottom hold.
42	DVCC	–	– 5V
43	CB	I	Connection pin of DEFECT bottom hold capacitor.
44	CP	I	Connecting pin of MIRR hold condenser. Non-inverted input pin of MIRR comparator.
45	RFI	I	Input pin with coupling capacitor where RF summing amplifier output is connected.
46	RFO	O	Output pin of RF summing amplifier and check point of eye pattern.
47	DVEE	–	– 5V
48	TZC	I	Input pin of tracking zero-cross comparator.

■ CXA1571S(IC702) : RF AMP FOR COMPACT DISC

1.Outline

The CXA1571S IC for compact disc 3-point method optical pickup output has following functions.
·RF amplifier · Focus error amp · Tracking error · APC circuit

2. Internal Block Diagram



3. Terminal Functions

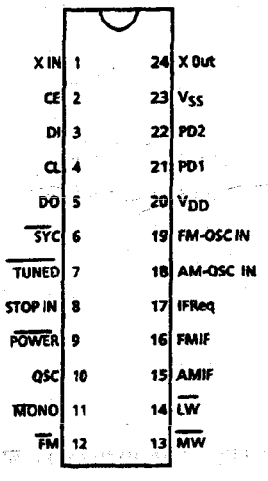
Pin No.	Symbol	I/O	Function
2	LD	O	APC amp output pin.
3	PD	I	APC amp input pin.
4 5	PD1 PD2	I I	RF I-V amp inverted input pins; they are connected to the A + C and B + D pins of the photodiode and receive current input.
7 8	F-IN E-IN	I I	F and E I-V amp inverted input pin; they are connected to Photodiodes F and E and receive current input.
9	VR	O	(VCC + VEE) / 2 DC voltage output pin.
10	VC	I	VC intermediate voltage input pin; when dual ±5V power supplies are used, this pin is connected to GND; for a single +5V power supply, it is connected to the VR pin.
13	EO	O	Monitor output pin for I-V amp E.
14	EI	I	Gain adjustment pin for I-V amp E.
15	TE	O	Tracking error amp output pin.
16	FE-BIAS	I	Bias adjustment pin for the mon-inverted side of the focus error amp.
17	FE	O	Focus error amp output pin.
18	RF O	O	RF amp output pin.
19	RF I	I	RF inverted side input pin; the resister connected between this pin and the RFO pin determines the gain of theRF amp.
20	LD-ON	I	This pin switches the APC amp on / off: on for VCC, off for ground.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

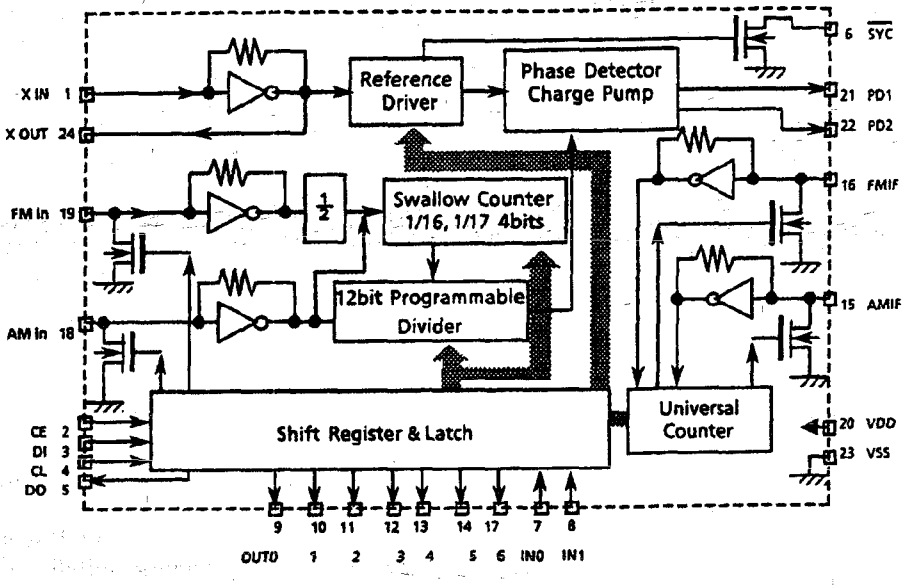
■ LC7218 (IC102) : PLL Synthesizer

1. The main function descriptions
   (1) It makes the local oscillation frequency by the control data from IC801.
   (2) Decode the control signal and transmit the signal for receiving conditions.
   (3) For the best tuning, count the internal-frequency and transmit the data to IC801.

2. Terminal Layout



3. Block Diagram



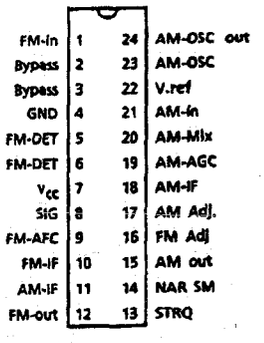
4. Pin Function Description

Pin No.	Symbol	I/O	Functions and Operations
1,24	X in , X out	I/O	Crystal oscillator (7.2MHz).
2	CE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	I	Receive the control data from the controller (IC801).
4	CL	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	O	Transmit the data from LC7218 to the controller which is synchronized with CL.
6	SYC	—	Not used.
7	Tuned	I	Receive the tuned signal from IC104 (LA1266A).
8	Stop in	I	Not used.
9	POWER	O	Not used.
10	QSC	O	ON mode with "H" and OFF mode with "L".
11	MONO	O	It is "H" on FM-monaural, "L" on FM-Stereo.
12	FM	O	It is "L" on FM mode.
13	MW	O	It is "L" on MW mode.
14	LW	—	It is "L" on LW mode.
15	AM-IF	I	Universal counter input for AM-IF from IC104 (LA1266A).
16	FM-IF	I	Universal counter input for FM-IF from IC104(LA1266A).
17	IF REQ	O	Output the "IF-signal request" to IC104 when the pin-7 (tuned in) goes to "H".
18	AM OSC	I	Input the local oscillator signal of AM.
19	FM OSC	I	Input the local oscillator signal of FM.
20	V_{DD}	—	This is a terminal of power supply.
21	PD1	O	PLL charge pump output: When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	O	Not used.
23	Vss	—	Power supply.

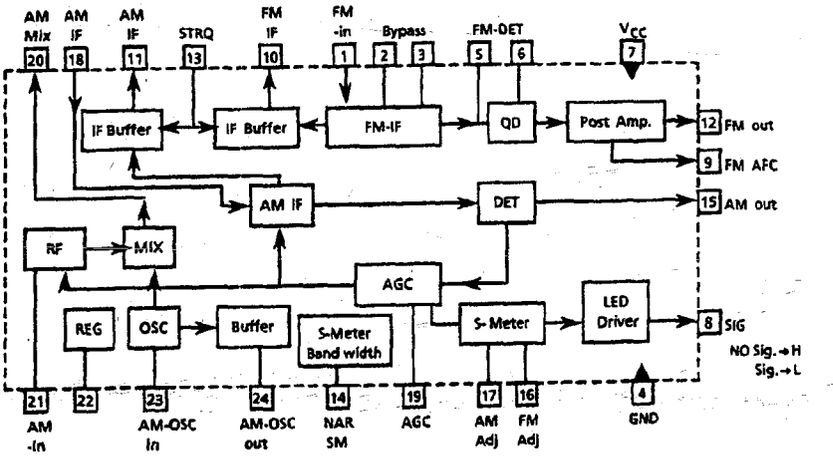
■ LA1266A (IC104) : FM AM IF AMP & detector

1. The main function descriptions
   (1) Amplify and detect of FM intermodulation frequencies.
   (2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Terminal Layout



3. Block Diagram



4. Pin Function Description

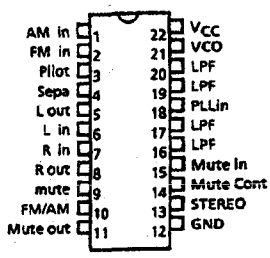
Pin No.	Symbol	I/O	Functions and Operations
1	FM in	I	This is an input terminal of FM IF Signal.
2,3	Bypass	–	Bypass of FM IF Amp.
4	GND	–	This is the device ground terminal.
5,6	FM DET	–	FM detect transformer.
7	V_{CC}	–	This is the power supply terminal.
8	SIG	O	Whe the set is tunning ,this terminal becomes "L".
9	FM AFC	O	This is an output terminal of voltage for FM-AFC(Auto frequency control).
10	FM IF	O	When the signal of IF REQ of IC102(LC7218) appear, the signal of FM IF output.
11	AM IF	O	When the signal of IF REQ of IC102(LC7218) appear, the signal of AM IF output.
12	FM out	O	FM detection output.
13	STRQ	I	The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal going to "High".
14	NAR SM	–	Control the Band-width of signal meter.
15	AM out	O	AM detection output.
16	FM Adj	–	For adjust the stop level (or mute level) of FM.
17	AM Adj	–	For adjust the stop level (or mute level) of AM.
18	AM-IF	I	Input of AM IF Signal.
19	AM-AGC	I	This is an AGC voltage input terminal for AM.
20	AM-MIX	O	This is an output terminal for AM mixer.
21	AM-IN	I	This is an input terminal for AM RF Signal.
22	V.REF	–	Register value between pin9 and pin22 desides the frequency width of the input signal.
23	AM-OSC	–	This is a terminal of AM Local oscillation circuit.
24	AM-OSC out	O	AM Local Oscillation Signal output.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

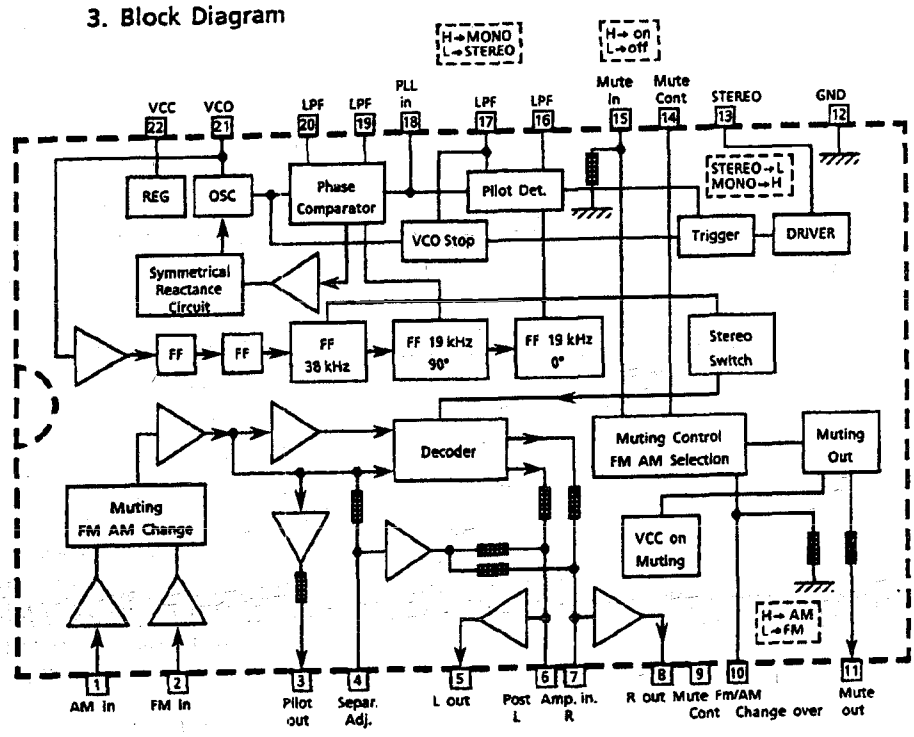
■ LA3401 (IC105) : FM MPX Detector

1. The main function descriptions
   (1) Detect the FM multiplex signal (Stereo signal).
   (2) When receiving FM stereo signal, it outputs the signal for indication.
   (3) AM / FM audio amplifier.

2. Terminal Layout



3. Block Diagram



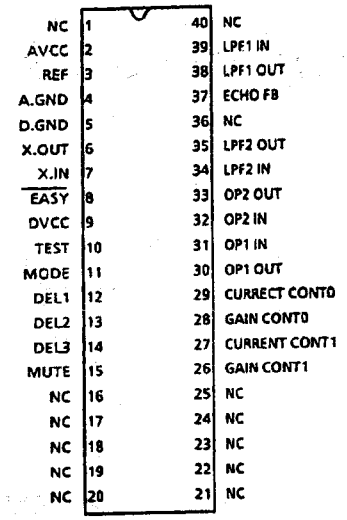
4. Pin Function Description

Pin No.	Symbol	I/O	Functions and Operations
1	AM in	I	This is an input terminal for AM detection signal.
2	FM in	I	This is an input terminal for FM detection signal.
3	Pilot out	O	Output of MPX pilot signal (Connect to Pin18).
4	Sepa. Adj.	–	Separation adjustment.
5	L. out	O	Left channel signal output.
6	L	I	Input terminal of the left channel post-amplifier
7	R	I	Input terminal of the right channel post-amplifier
8	R out	O	Right channel signal output
9	Mute Cont	–	The mute time is controlled by the connected capacitor when turning the power switch on.
10	FM/AM	I	Change over the FM/AM input. "H" : AM, "L" : FM
11	Mute out	—	Not used
12	GND	–	Ground terminal.
13	Stereo	O	Stereo indicator output. Stereo : "L", Mono : "H"
14	Mute Cont	–	The mute time is controlled by the connected capacitor when changing over the FM / AM .
15	Mute in	I	Mute signal input. "H" : Mute on, "L" : Mute off.
16	LPF	–	Low pass filter of pilot detector.
17	LPF	–	While this terminal goes to "H", the VCO stops.
18	Pilot in	I	Pilot signal input
19	LPF	–	Low-pass filter of PLL.
20	LPF	–	Low-pass filter of PLL.
21	VCO	I	Voltage controlled oscillator terminal.
22	V_{CC}	–	Power supply.

Internal Block Diagram of Other ICs

■ M50197P (IC991) : Digital Delay IC (Only for universal version)

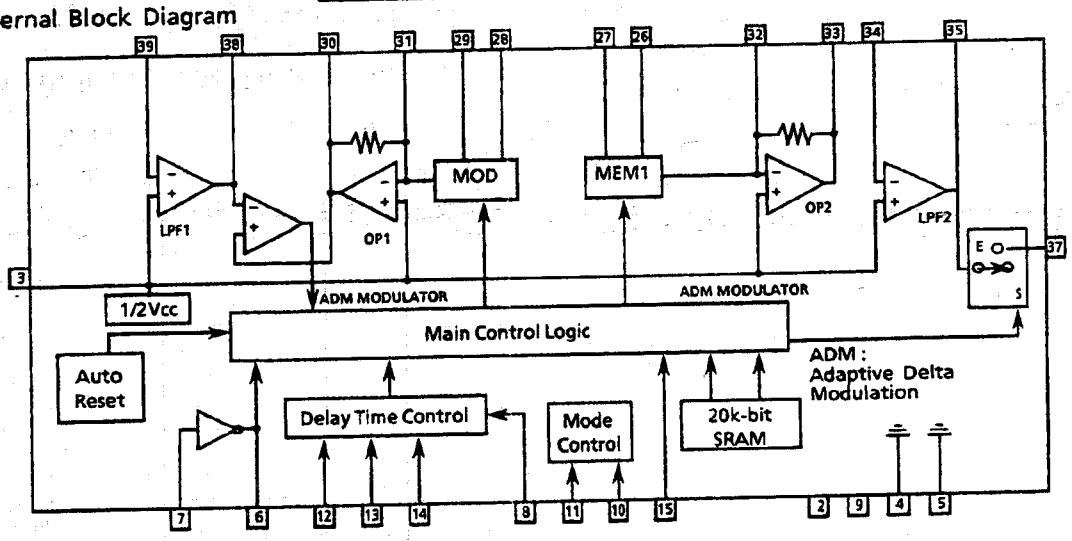
1. Terminal Layout



2.Terminal Functions

Pin No	Symbol	Function	Pin No	Symbol	Function
1,40	NC	Non connection	16~25	NC	Non connection
2	AVCC	Power Supply	26	GAIN CONT1	Gain control
3	REF	Reference voltage	27	CURR. CONT1	ADM control
4	AGND	Ground	28	GAIN CONT0	Gain control
5	DGND	Digital ground	29	CURR. CONT0	ADM control
6	xout	Oscillation terminal	30	OP1 OUT	OP amp output
7	XIN	Oscillation terminal	31	OP1 IN	OP amp input
8	EASY	Interface select	32	OP2 IN	OP amp input
9	VDD	Power supply	33	OP2 OUT	OP amp output
10	TEST	Connected to GND	34	LPF2 IN	Filter input
11	MODE	Connected to 5V	35	LPF2 OUT	Filter output
12	DEL1	Connected to GND	36	NC	Non connection
13	DEL2	Connected to 5V	37	ECHO FB	Echo feedback
14	DEL3	Connected to 5V	38	LPF1 OUT	Filter output
15	MUTE	Connected to GND	39	LPF1 IN	Filter input

3. Internal Block Diagram



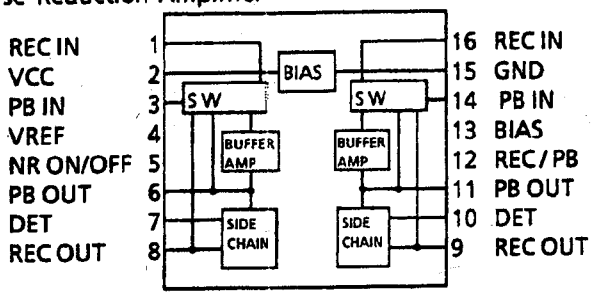
4. Operation

1) This ic has 2 modes, one of which is echo mode and the other is surround mode. Following table shows the differences between the two modes.
2) When EASY is 'H', DEL1, DEL2and DEL3 are used as REQ, SECK and SEDATA. In this case, SEDATA which is used to set the mode and delay time previously mentioned, is read at the falling edge of SECK while REQ is 'L'.

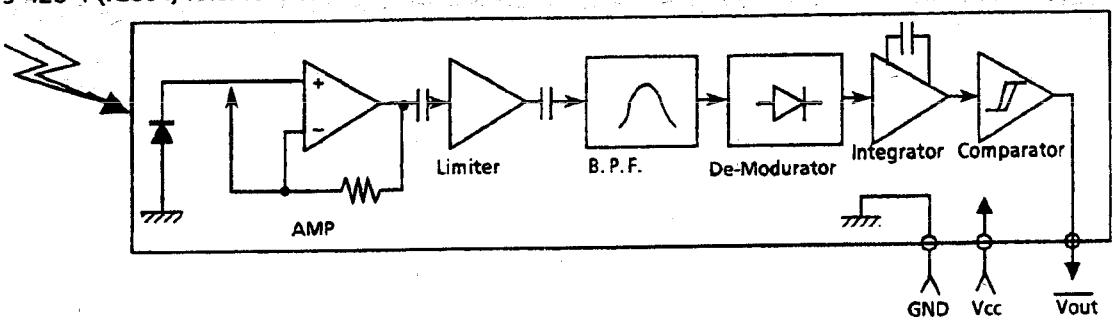
DEL1 PIN12	DEL2 Pin13	DEL3 Pin14	Surround mode(Pin11 = L)		Echo mode (Pin11 = H)	
			Sampling frequency	Delay time (mSEC)	Sampling frequency	Delay time (mSEC)
L	L	L	500kHz	4.1	250kHz	20.5
H	H	L	500kHz	10.2	250kHz	41.0
H	L	L	500kHz	14.3	250kHz	61.4
L	H	L	500kHz	20.5	250kHz	81.9
H	L	H	500kHz	24.6	125kHz	98.3
L	L	H	500kHz	30.7	125kHz	122.9
L	H	H	500kHz	34.8	125kHz	139.3
H	H	H	500kHz	41.0	125kHz	163.8

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

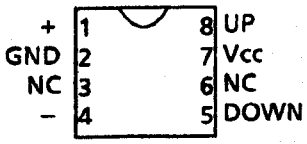
■ HA12136A (IC381) : Noise Reduction Amplifier



■ SPS-420-1 (IC804) : Remote control Module IC



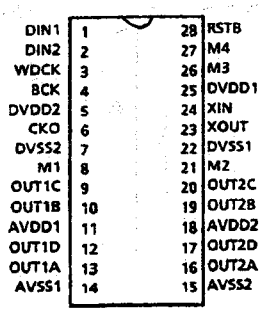
■ LB1639-CV (IC489) : Motor Driver



IN 1 (pin1)	IN 2 (pin4)	OUT 1 (pin8)	OUT 2 (pin5)	MOTOR
H	L	H	L	CLOCKWISE
L	H	L	H	COUNTER-CLOCKWISE
H	H	OFF	OFF	WAITING
L	L	OFF	OFF	WAITING

■ MN35501 (IC751) : D/A converter

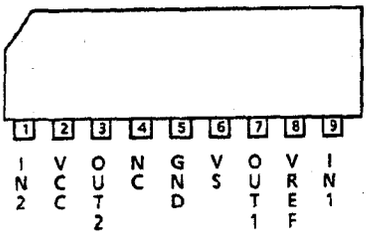
1. Terminal Layout



2. Terminal Functions

Pin No.	Symbol	I/O	Function
1,2	DIN1, DIN2	I	Serial data input
3	WDCK	I	Word clock input
4	BCK	I	Bit clock input
5	DVDD2	–	Power supply for digital circuit
6	CKO	O	Clock output
7	DVSS2	–	GND for digital circuit
8	M1	I	Input for mode select
9,10	OUT1C, OUT1B	O	PEM signal output (Channel 1)
11	AVDD1	–	Power supply for analog circuit (Channel 1)
12,13	OUT1D, OUT1A	O	PEM signal output (Channel 1)
14	AVSS1	–	GND for analog circuit (Channel 1)
15	AVSS2	–	GND for analog circuit (Channel 2)
16,17	OUT2A, OUT2D	O	PEM signal output (Channel 2)
18	AVDD2	–	Power supply for analog circuit (Channel 2)
19,20	OUT2B, OUT2C	O	PEM signal output (Channel 2)
21	M2	I	Input for mode select
22	DVSS1	–	GND for clock circuit
23,24	XOUT, XIN	–	Oscillation terminal
25	DVDD1	–	Power supply for clock circuit
26, 27	M3, M4	I	Input for mode select
28	RSTB	I	Reset input (Low active)

■ TA8409S (IC931~934) : DC motor driver



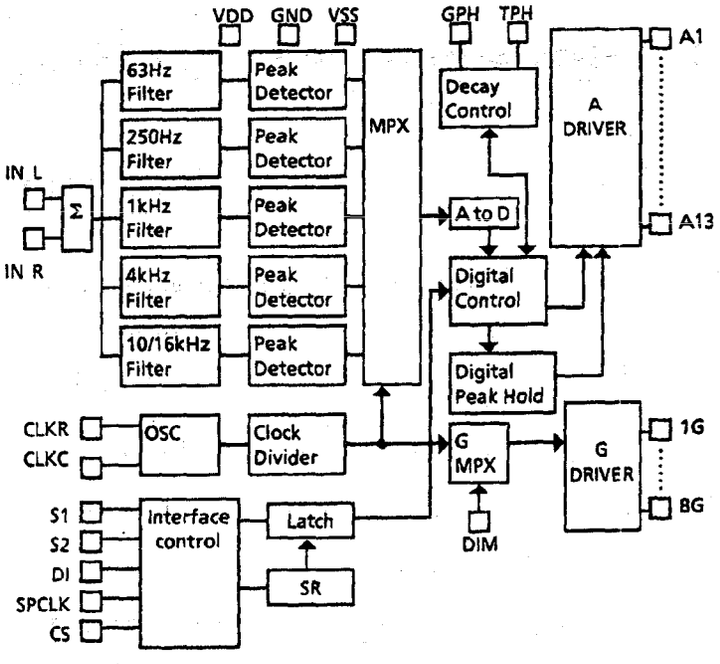
Function

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	OPEN
0	1	L	H	CLOSE
1	1	L	L	BRAKE

∞ : High impedance

■ XR1095CP (IC803) : Display Driver

1. Internal Block Diagram

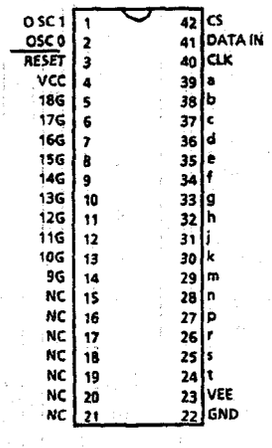


2. Terminal Functions

Pin No.	Symbol	Function
1~5, 9~16	T1~T13	FL anode control
17	CS	Chip select
18	SPCLK	Clock for data transmission
19	DI	Serial data input
20,21	S1, S2	Chip select (connected to GND)
22	DIM	Connected to ground
23	VSS	Power supply(−)
24	GND	Ground
25	R IN	Audio signal input
26	L IN	Audio signal input
27 28	GPH TPH	The resistor and capacitor connected to this pin determine the peak hold time.
31~38	1G~8G	FL grid control
40	CLKR	A resistor is connected for oscillation
41	CLKC	A capacitor is connected for oscillation
42	VDD	Power supply (+)

■ MSC7112-01SS (IC802): FL Driver IC

1. Terminal Layout



2. Terminal Functions

Pin No.	Symbol	I/O	Function
1 2	OCS 1 OSC 0	I O	Oscillation circuit is composed by connecting the resistor and capacitor.
3	RESET	I	Reset input for internal logic at turning the power on.
4	V_{DD}	–	Power supply
5~14	18G~9G	O	FL grid drive signal
15~21	NC	–	Non connection
22	V_{SS}	–	GND
23	V_{EE}	–	−27V
24~39	t~a	O	FL anode drive signal
40	CLK	I	System clock for shift register
41	DATA IN	I	Indication data input
42	CS	I	Chip select

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Internal Connection of the FL Display Tube

■ ELU0001-153

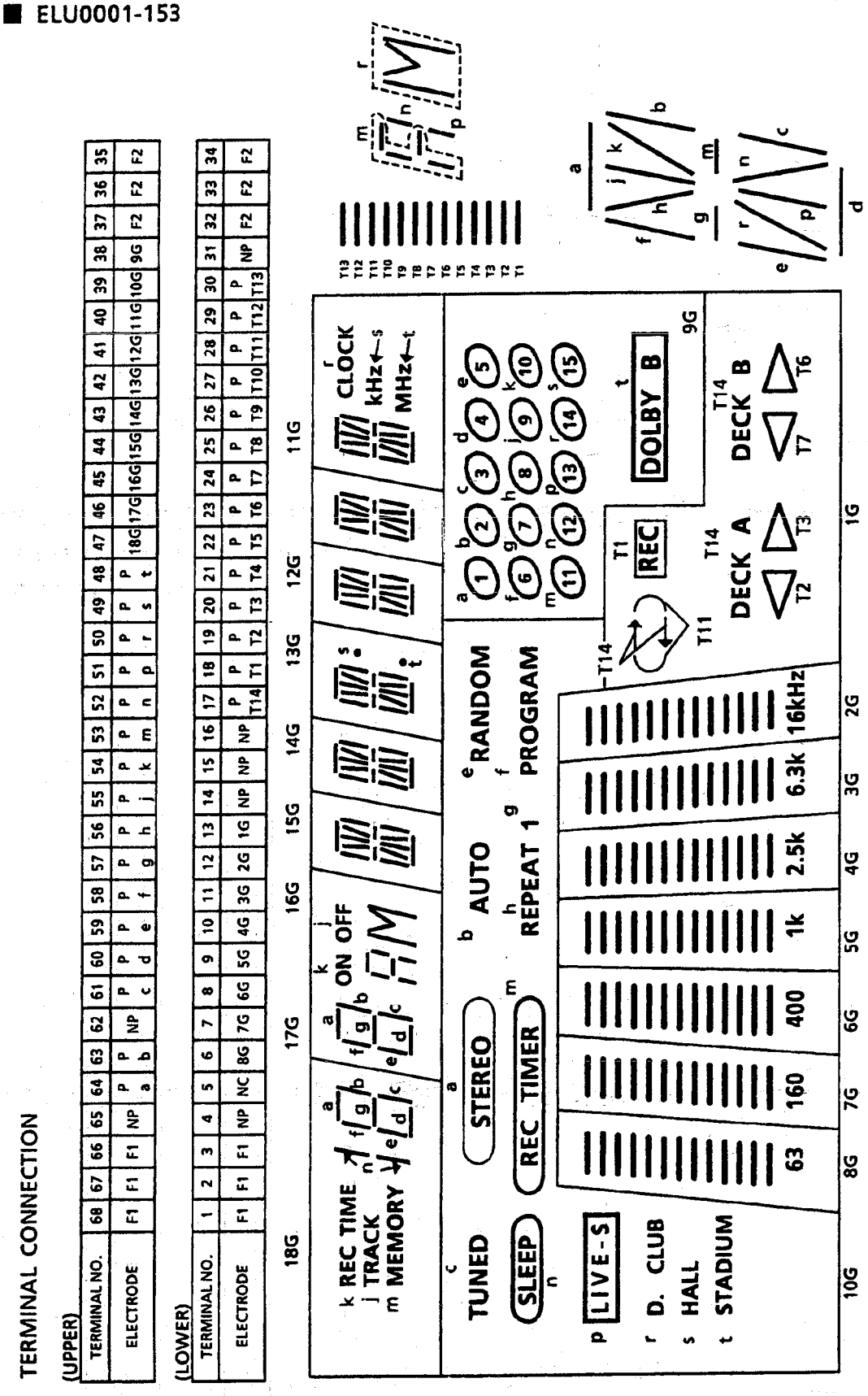
TERMINAL CONNECTION

(UPPER)

TERMINAL NO.	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
ELECTRODE	F1	F1	F1	NP	P a	P b	NP	P c	P d	P e	P f	P g	P h	P j	P k	P m	P n	P p	P r	P s	P t	18G	17G	16G	15G	14G	13G	12G	11G	10G	9G	F2	F2	F2

(LOWER)

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
ELECTRODE	F1	F1	F1	NP	NP	NC	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	P T14	P T1	P T2	P T3	P T4	P T5	P T6	P T7	P T8	P T9	P T10	P T11	P T12	P T13	NP	F2	F2	F2



Disassembly Procedures

■ Top cover removal
1. Remove 4 screws on the rear side and 2 screws on both sides of the cover.
2. Remove the cover.

■ Rear panel removal
1. Remove the top cover.
2. Remove the 5 screws Ⓐ.
3. Remove the 9 screws Ⓑ.
4. Remove the rear panel.

■ Tuner PCB (ENA-140-1) removal
1. Remove the top cover.
2. Remove the rear panel (definitely).
3. Remove the screw Ⓒ.
4. Remove the connectors JB103, J101 on the tuner PCB to remove the tuner PCB.

■ Cassette PCB (ENJ-072-2) removal
1. Remove the top cover.
2. Remove the rear panel.
3. Remove the tuner PCB.
4. Remove the 2 screws Ⓓ.
5. Disconnect the connectors P201, 202, 203, 204 and J205.
   J205 is connected to FW205.

■ CD PCB(ENN-373-1) with mechanism assembly removal.
1. Remove the top cover.
2. Remove the rear panel.
3. Remove the tuner PCB.
4. Disconnect the wires J205, J851, J911, J601 and P701.
5. Remove the 3 screws Ⓕ (Fig 4).
6. Remove the screw Ⓖ on the CD assembly base.
7. Take them out of the shassis, lifting them a little.

■ Front panel assembly removal
1. Remove the top cover.
2. Remove the rear panel.
3. Remove the tuner and cassette PCBs.
4. Remove the CD PCB with the mechanism assembly.
5. Remove the 3 screws Ⓔ on the bottom of the front panel.
7. Disconnect the connectors J512, 531, 901 and 902 (Fig 5).
8. Release the 3 hooks to remove the assembly (Fig 3).

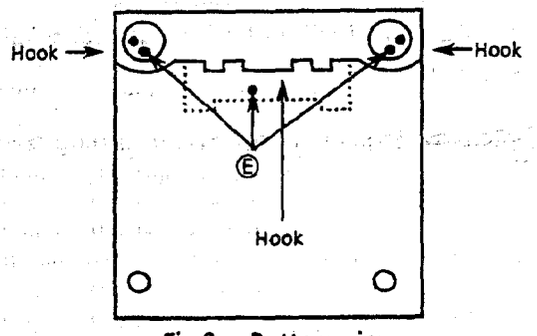


Fig 3 Bottom view

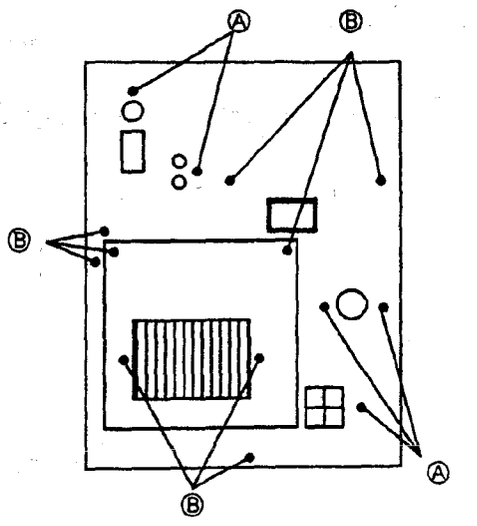


Fig 1 Rear view

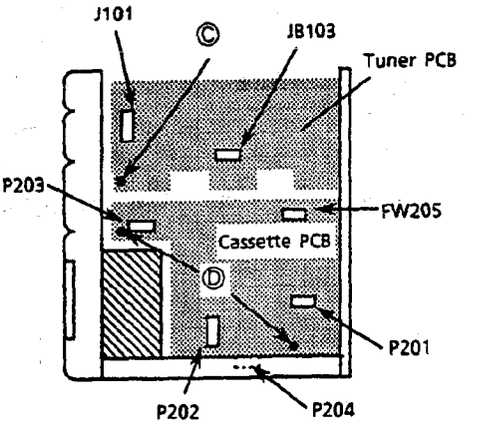


Fig 2 Right side view

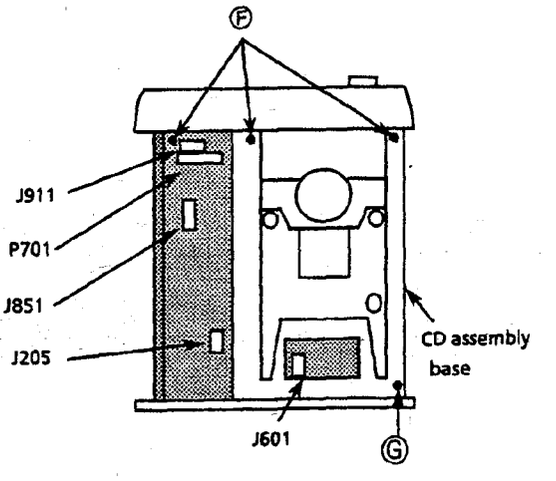


Fig 4 Top view

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

■ CD mechanism assembly removal

1. Remove the cd PCB with mechanism assembly.
2. Disconnect the connectors P602, P603.
3. Remove the 3 screws Ⓗ.
4. Disconnect the connector P601 under the mechanism, lifting the mechanism up.
5. Turn the screw Ⓘ located under the mechanism to remove the tray out of the loading mechanism.
6. Remove the screw Ⓙ to remove the tray.
7. Remove the 2 screws Ⓚ to remove the clamp assembly.
8. Remove the screw Ⓛ located under the tray to take the cd mechanism assembly out.

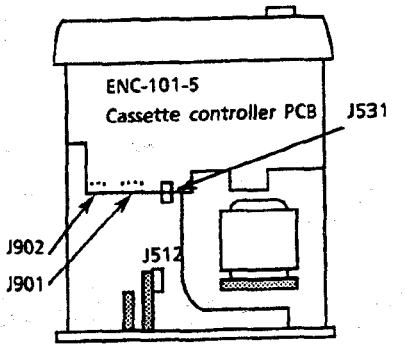


Fig 5

■ Cassette mechanism with the cassette controller PCB (ENC-101-5) removal

1. Remove the top cover.
2. Remove the front panel assembly.
3. Disconnect the connectors J991, P992 and JB851 (Fig 9).
4. Remove the 8 screws Ⓜ and Ⓝ.
5. Open the cassette doors to remove the mechanism.

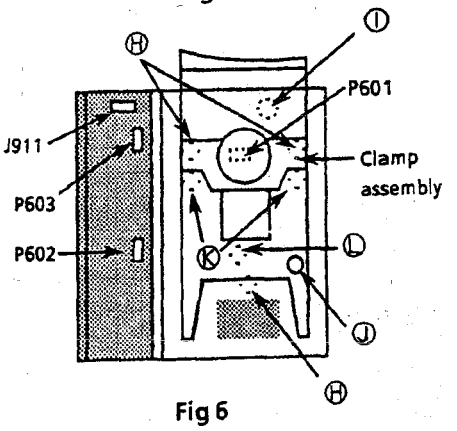


Fig 6

■ Cassette holder removal

1. Remove the front panel assembly.
2. Remove the cassette mechanism assembly.
3. Remove the spring hooked on the holder (Fig 7).
4. Remove the damper (Fig 9).
5. Remove the holder.

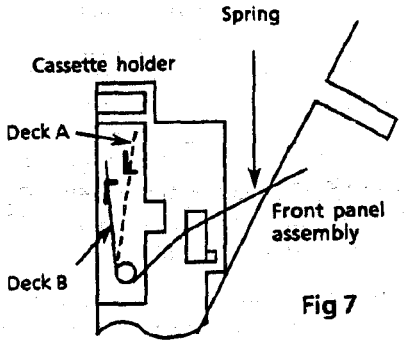
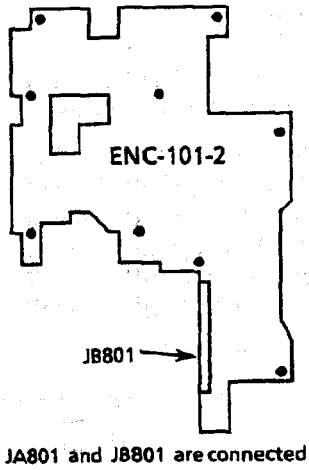


Fig 7



JA801 and JB801 are connected without wire.

Fig 8

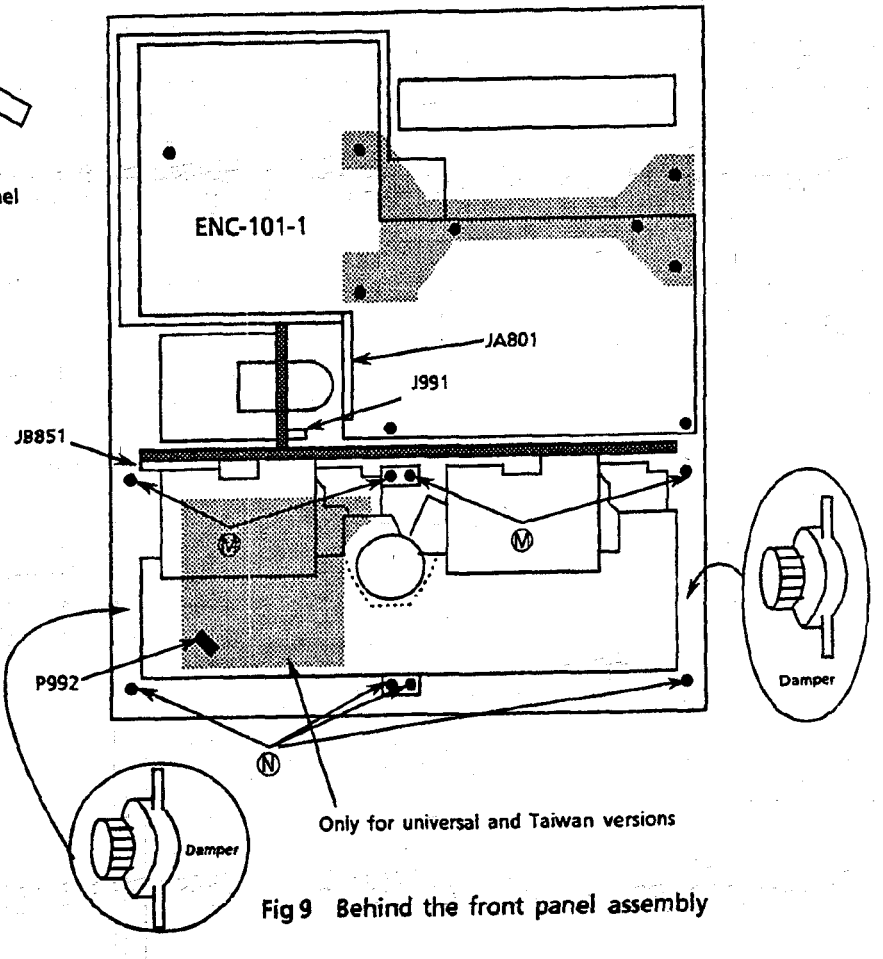


Fig 9 Behind the front panel assembly

Disassemble of the cd mechanism assembly

■ Pickup removal

1. Remove the cd mechanism assembly.
2. Release the shaft to remove the pickup (Fig 10).

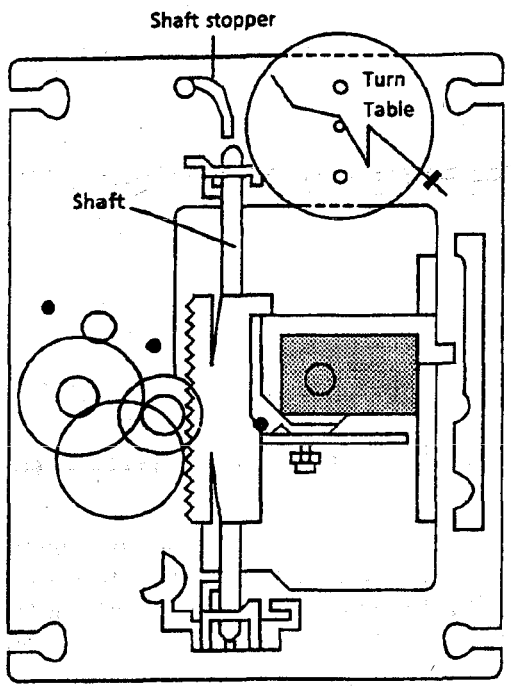


Fig 10 CD mechanism assembly

■ Spindle motor removal

1. Remove the cd mechanism assembly.
2. Remove the turntable, and remove the two screws retaining the spindle motor.
3. Remove the screws retaining the spindle and feed motor P.C. Board and unsolder it.

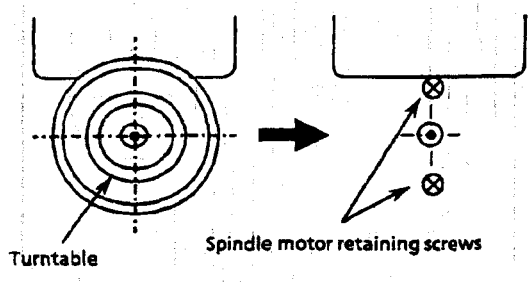


Fig 11

■ Spindle motor installation

1. Tighten the 2 screws to the same torque.
2. Fasten the spindle and feed motor P.C. board with the screw and solder.
3. Install the turntable. When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the turntable is exactly 19.4±0.1mm.

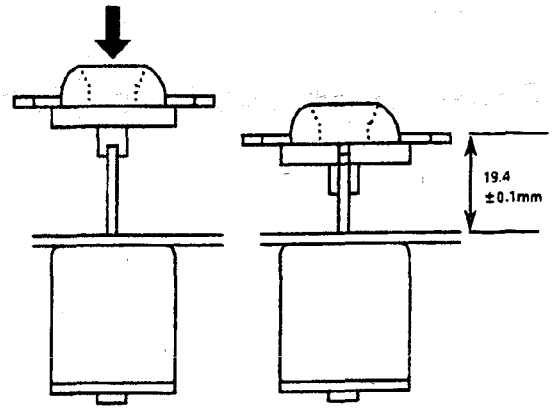


Fig 12

4. After inserting the turntable, bond the motor shaft and turntable together (at the section marked by an arrow in fig 13 on the left below).

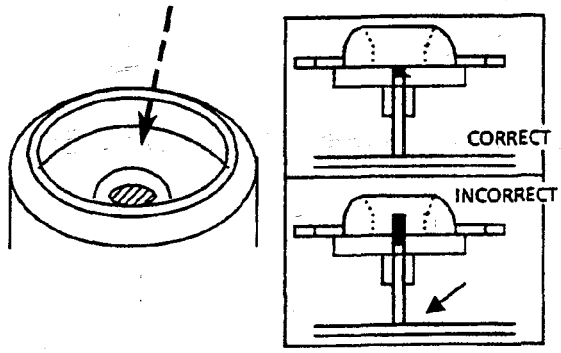


Fig 13

5. Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an allow in fig 13 on the right).

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Disassemble of the cassette mechanism

■ Cassette controller PCB (ENC-101-5) removal

1. Remove the cassette mechanism assembly with the PCB.
2. Release the 8 hooks to remove the controller PCB (Fig 14).

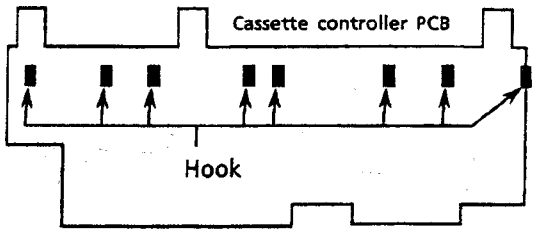


Fig 14

■ Head assembly removal

1. Remove the cassette mechanism assembly.
2. Unsolder the flexible wire (Fig 16).
3. Remove the 2 screws Ⓤ fixing the head assembly (Fig 21).

※ **Note**
The direction of the head is changed with the head gear. When servicing, install the head gear according to the direction of the head. Refer to fig 15.

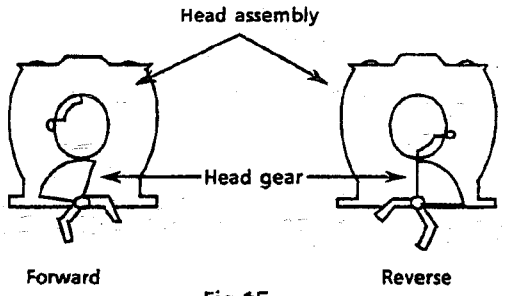


Fig 15

■ Pinch roller arm assembly removal

1. Release the return spring (Fig 21).
2. Release the hook holding the pinch roller arm assembly to remove the assembly (Fig 16).

■ Reel motor PCB removal

1. Remove the cassette mechanism assembly.
2. Remove the cassette controller PCB.
3. Remove the screw Ⓞ to remove the echo circuit board (Fig 17).
4. Remove the screw Ⓟ fixing the reel motor PCB.
5. Unsolder the reel motor PCB.
6. Remove the PCB.
   Be careful so that stress is not added to the terminals of the motor.

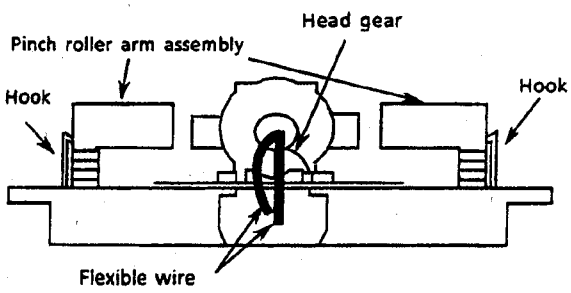


Fig 16

■ Capstan motor removal

1. Remove the cassette mechanism assembly.
2. Remove the reel motor PCBs.
3. Remove the 4 screws Ⓠ fixing the bracket (Fig 17).
4. Remove the motor with the bracket.
5. Remove the 2 screws fixing the motor and the bracket.

■ Reel motor removal

1. Remove the cassette mechanism assembly.
2. Remove the reel motor PCB.
3. Remove the FR arm assembly (Fig 21).
4. Remove the screw Ⓣ fixing the motor (Fig 21).
5. Remove the hooks fixing the motor to remove the motor.

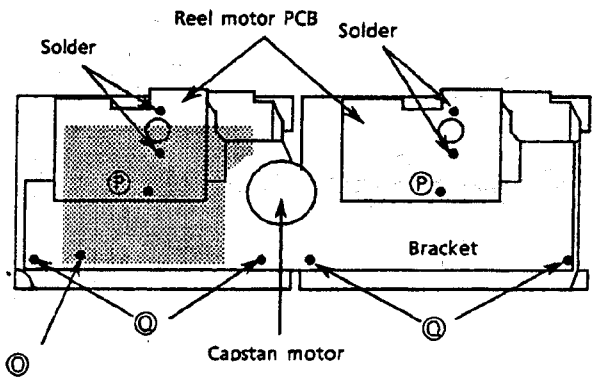


Fig 17

■ Fly wheel removal

1. Remove the cassette mechanism assembly.
2. Remove the reel motor PCB.
3. Remove the screws ⓠ and the bracket to remove the fly wheels (Fig 17).

※ To install the bracket

1. Install the belt of mechanism A as shown in fig 18.
2. Assemble the mechanism A and the bracket with the capstan motor.
3. Hang the belt of the mechanism A to the motor pully using a tweezers and the like.
4. Hang the part ⓡ to the Idler pully.
5. Install the mechanism B installed the belt as shown in fig 20 to the bracket which is assembled with the mechanism A.
6. Hang the part ⓢ to the motor pully using a tweezers and the like.

■ Cam switch PCB removal

1. Remove the fly wheel.
2. Remove the hooks fixing the PCB to remove the cam switch.
   When assembling the cam switch, install it so that the part ⓥ meets the part ⓦ (Fig 22).

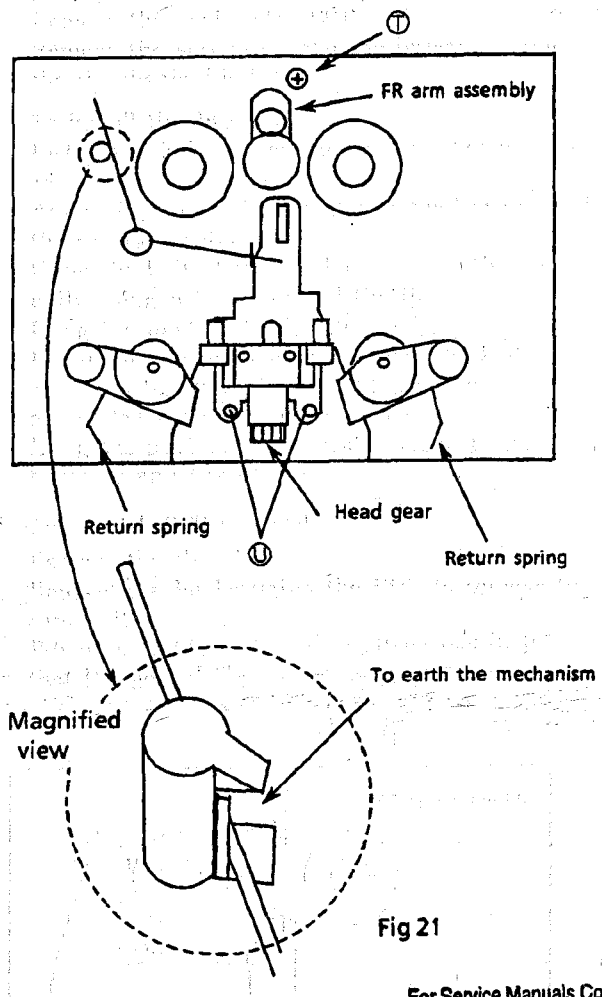


Fig 21

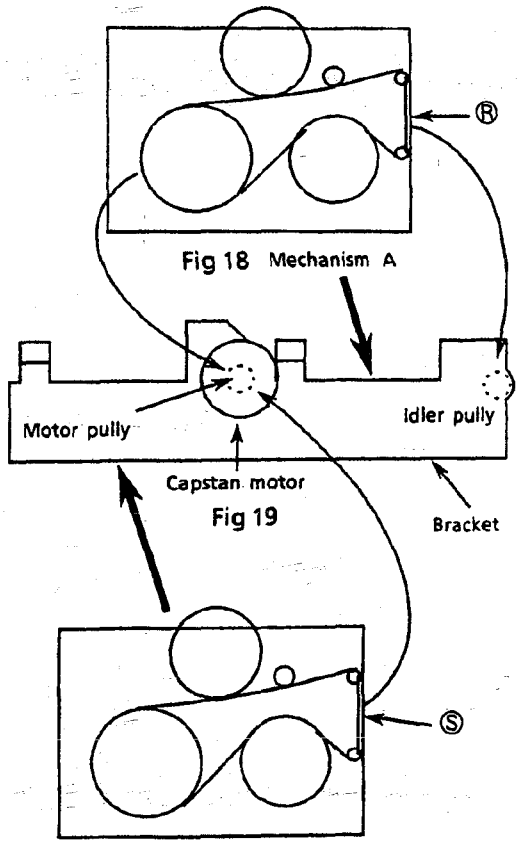


Fig 18 Mechanism A

Fig 19

Fig 20 Mechanism B

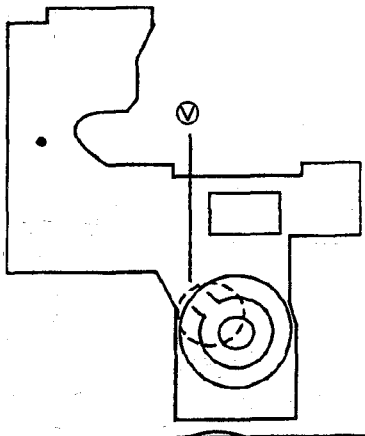
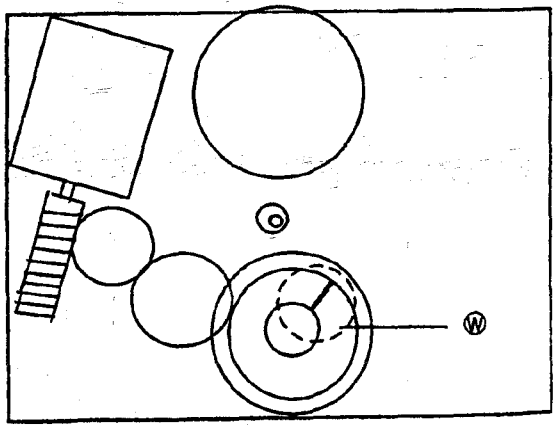


Fig 22

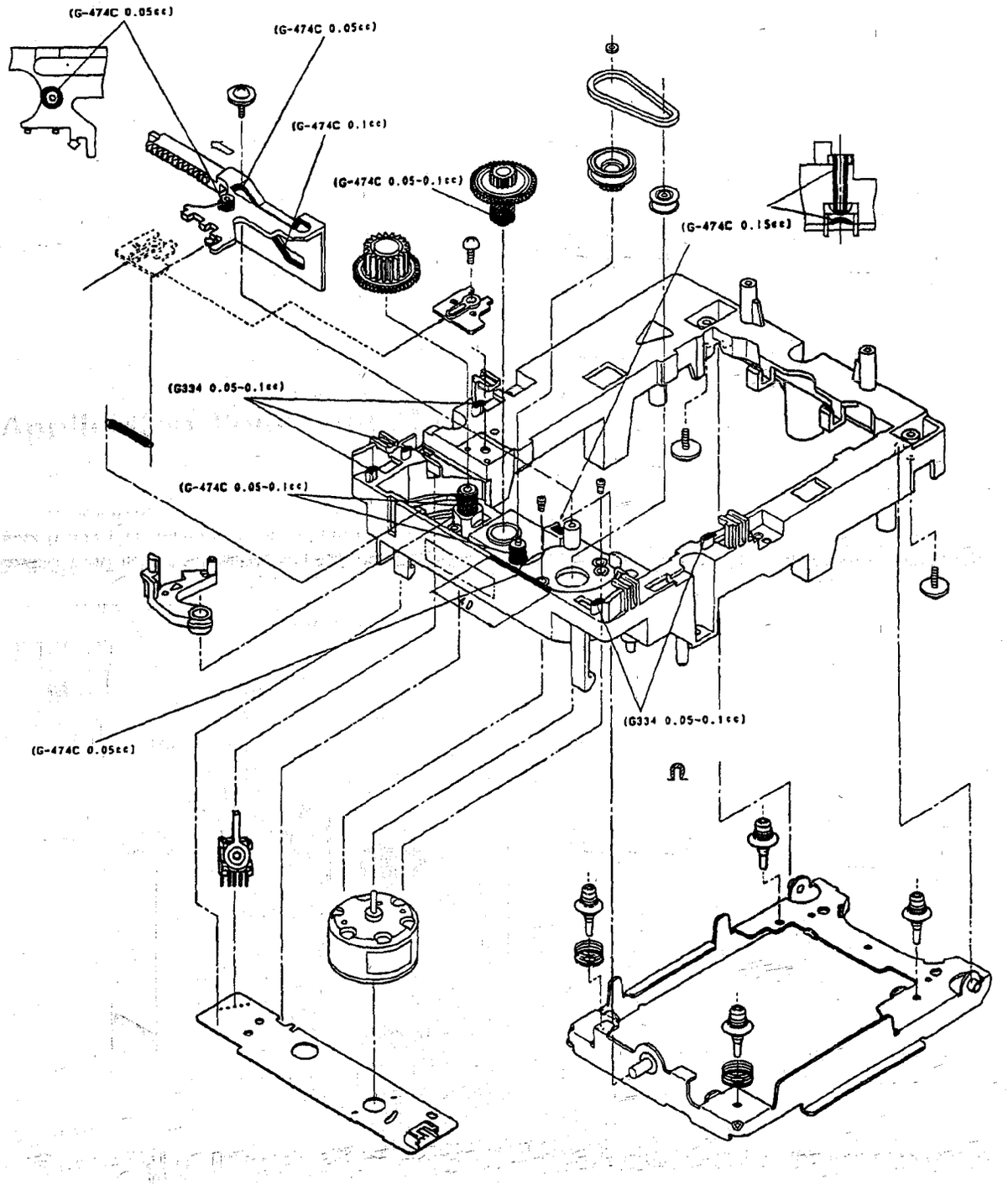


For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Application Points for Grease

Grease used

- G-334 (Shin-Etsu Chemical Co., Ltd.)
- G-474C (Kanto Chemical Co., Ltd.)



Grease part numbers

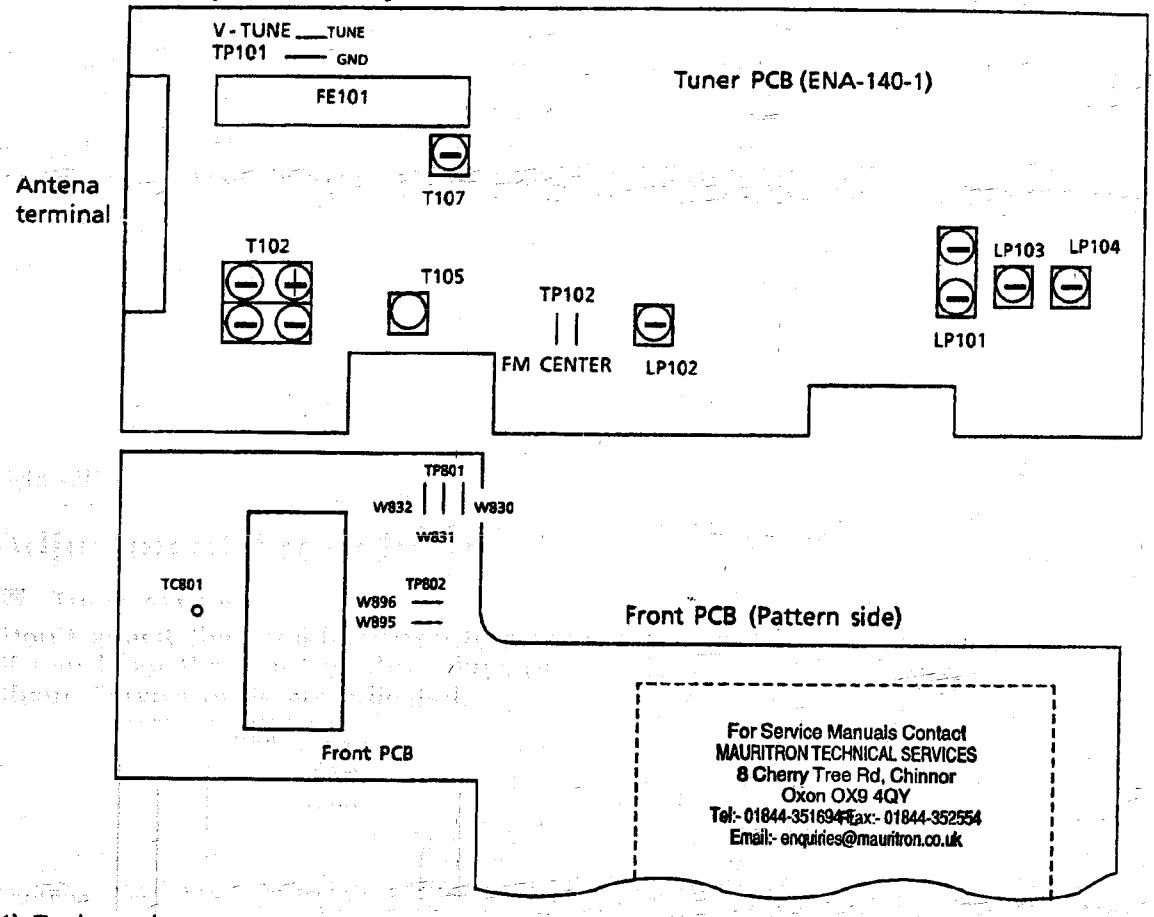
G-334: EBS0006-009B

G-474C: EBS0006-019B

Adjustment Procedures

■ Tuner section

Don't adjust the semi-fixed resistors and coils except below mentioned. If you have them out of the values previously adjusted by mistake, replace them. Service parts are adjusted.



(1) Tuning voltage

Confirm the voltages in the table below at TP101. If the voltages are not satisfied, replace T102 for AM or FE101 for FM.

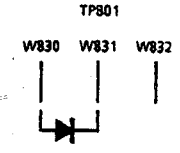
Frequency	FM (V)			MW (V)				LW (V)		
	64.0MHz	87.5MHz	108MHz	522KHz	530KHz	1629KHz	1710KHz	144kHz	290kHz	353kHz
East Europe	1.7±0.7	—	8.0±2.0	0.5~1.0	—	7.5~8.5	—	0.5~1.0	—	6.5~9.0
U.S.A., Canada	—	1.6±1.0	8.0±2.0	—	0.5~1.0	—	8.0~9.0	—	—	—
the U.K., Continental Europe	—	1.6±1.0	8.0±2.0	0.5~1.0	—	7.5~8.5	—	0.5~1.0	—	6.5~9.0
Italy	—	1.6±1.0	8.0±2.0	0.5~1.0	—	7.5~8.5	—	0.5~1.0	5.0~7.5	—
Australia	—	1.6±1.0	8.0±2.0	0.5~1.0	—	7.5~8.5	—	—	—	—

(2) FM detector coil

Receive a broadcast by using the function of 'AUTO STOP'.
Adjust T105 so that the voltage at TP102 becomes 0±1.5mV.

(3) Frequency of the clock

1. After connecting a diode between W830 and W831 as shown right, connect ac power cord into ac outlet.
2. Confirm that the display is off and remove the diode.
3. Connect a frequency counter between W832 and W831.
4. Adjust TC801 so that the frequency becomes 34952.5±0.15Hz.



Example 1SS133 1S2076
1SS119 1S2473

■ Deck Section

1. Measuring instruments

Audio frequency signal generator (0dbs output at the 600 ohm output terminal from 50Hz to 20KHz)
Electronic voltmeter
Frequency counter
Wow & Flutter meter
Distortion Meter with band pass filter
Attenuator (600 ohm impedance)
A resistor with 600Ω

0dBs = 0.775V

Standard Tape

Tape No.	Frequency	Level (Wow & Fkutter)	Purpose
VTT-703L	10kHz	– 10dBs	Head azimuth , Frequency Response
VTT-712	3000Hz	0dBs 0.025%WRMS	Tape Speed , Wow & Flutter
VTT-724	1kHz	– 4dBs	Standard Level
TMT-6447	–	–	Blunk Skip
TMT-6247 , TMT-6237	–	–	Music Scan
TMT-7046	–	–	Recording standard Normal : UR
AC-712	–	–	Recording standard METAL :MA
AC-513	–	–	Recording standard CrO_2 :SA
TW-2111, TW-2121	–	–	Forward / reverse play torque measuring
TW-2231	–	–	Feed forward / rewind torque measuring
C-120 Tape	–	–	Comfirming the tape running

2. Adjustment and repairing the mechanism

Item	Adjustment method	Standard value	Remarks
Head azimuth	Deck A 1. Connect an electronic voltmeter to the DOLBY TP(figure 3) to playback VTT-703L. 2. Adjust screw Ⓐ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 3. Adjust screw Ⓑ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. Deck B 4. Adjust screw Ⓒ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 5. Adjust screw Ⓓ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. 6. After making the adjustment,apply screw lock to prevent screws Ⓐ , Ⓑ , Ⓒ and Ⓓ coming loose .	Maximum	1. **Refer to figure 1.** 2. When the specified characteristic cannot be obtained because of head wear, excessive magnetization, etc., replace the head assembly and adjust the head azimuth. Also, perform the electric adjustment. 3. When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head assembly to avoid complaints.
Playback torque	1. Measure the torque in the playback mode by the torqu meter.	26 ~ 62 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Fast forward torque	1. Measure the torque in the fast forward mode by the torqu meter.	80 ~ 200 g-cm	When the standard torque cannot be obtained,replace the FR arm assembly or motor.
Rewind torque	1. Measure the torque in the rewind mode by the torqu meter.	80~ 200 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Wow & flutter	1. Connect the wow & flutter meter to the DOLBY TP(figure 3) and play back VTT-712 . 2. Its reading should be within 0.2% (WTD).	—	As a complaint may occur if the wow & flutter fluctuates by 0.1% even though it is allowed in the standard, repairing is required.

Deck A　　Figure 1　　Deck B

3. Electrical Adjustments (Make the following adjustments after adjusting the head azimuth.)

In principle, the adjustments should be made in the following sequence.
Set the NR switch to OFF and the BEAT CUT switch to "1".
Adjustments marked with an asterisk (*) should always be made after the head is replaced **0dBs = 0.775V.**

	Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
1	Tape Speed	1. Connect a frequency counter to the DOLBY TP(figure 3) and play back VTT-712. 2. Adjust the semi-fixed resistor VR951 on ENC-101-5.	VR951	3,000 Hz ±10Hz	—
*2	Standard level (Playback Level)	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). Play back VTT-724 (1 kHz : −4dBs) to adjust the semi-fixed resistors.	**Deck A** L: VR221 R: VR222 **Deck B** L: VR223 R: VR224	−5.5dBs (411mV) ±1dB	1) The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
*3	Playback Frequency Response	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). 2. Play VTT-703L (10kHz : −10dBs) and adjust semi-fixed resistors to obtain the standard values.	**Deck A** L: VR203 R: VR204 **Deck B** L: VR205 R: VR206	−11.5dBs (206mV) ±3dB	—
*4	Recording Bias Frequency	1. Connect a frequency counter to the BIAS TP(figure 3), and perform a recording to adjust bias frequency.	L335	100 kHz ±5 kHz	Set the BEAT CUT SWITCH to "1".
*5	Record / Play Frequency Response (Bias current)	1. Supply 1kHz and 12.5kHz with 30mV signals to VIDEO/AUX terminals respectively to record them. 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signals again to confirm the values.	L : VR335 R : VR336	0±3 dB for 12.5 kHz with 1 kHz as the standard.	**Refer to figure 2 below.** 1) The recording and playback frequency response of a cassette deck are adjusted by adjusting the bias current. 2) Perform the adjustment with normal tape and confirm that the values are within the range for CrO_2 tape.
*6	Record / Playback Sensitivity	1. Input a 1 kHz (−8.2dBs: 300mV) signal to VIDEO/AUX terminals and record it on the left and right channels. 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signals again to confirm the values.	L : VR367 R : VR368	−5.5dBs (411mV)	Adjust with normal tape and make sure that the left / right level difference is 1.0dB or less

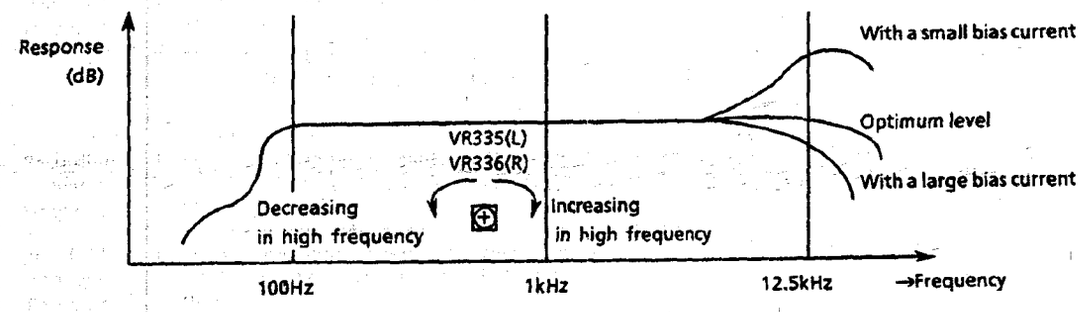


Figure 2

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

	Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
7	Erase ratio check	1. Record a music source using the CrO_2 tape. 2. Rewind and erase the recorded section. 3. Comfirm nothing can be heard.	–	–	–
8	Auto-stop check	1. Make sure to operate AUTO STOP at the end of tape running and not to operate on the way of the playing.	–	–	–
9	Music Scan	1. Make sure not to work the music scanning operation at the start of tape wind using TMT-6237. 2. Make sure to work the music scanning operation at the end of tape wind using TMT-6247.	–	–	–

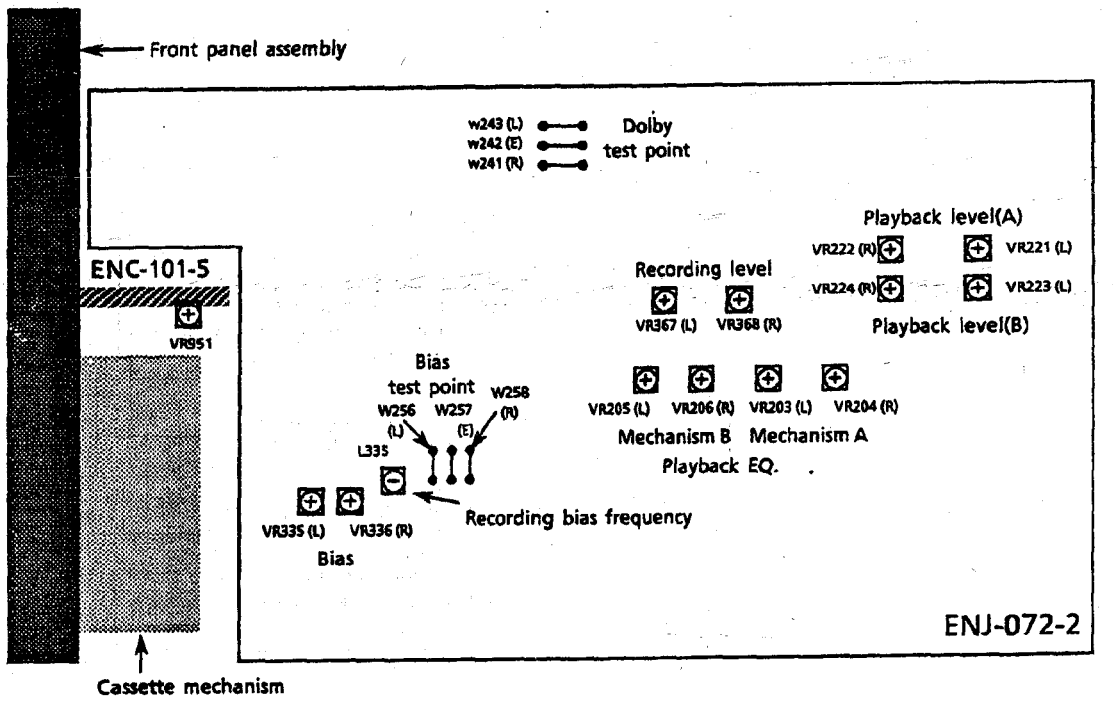
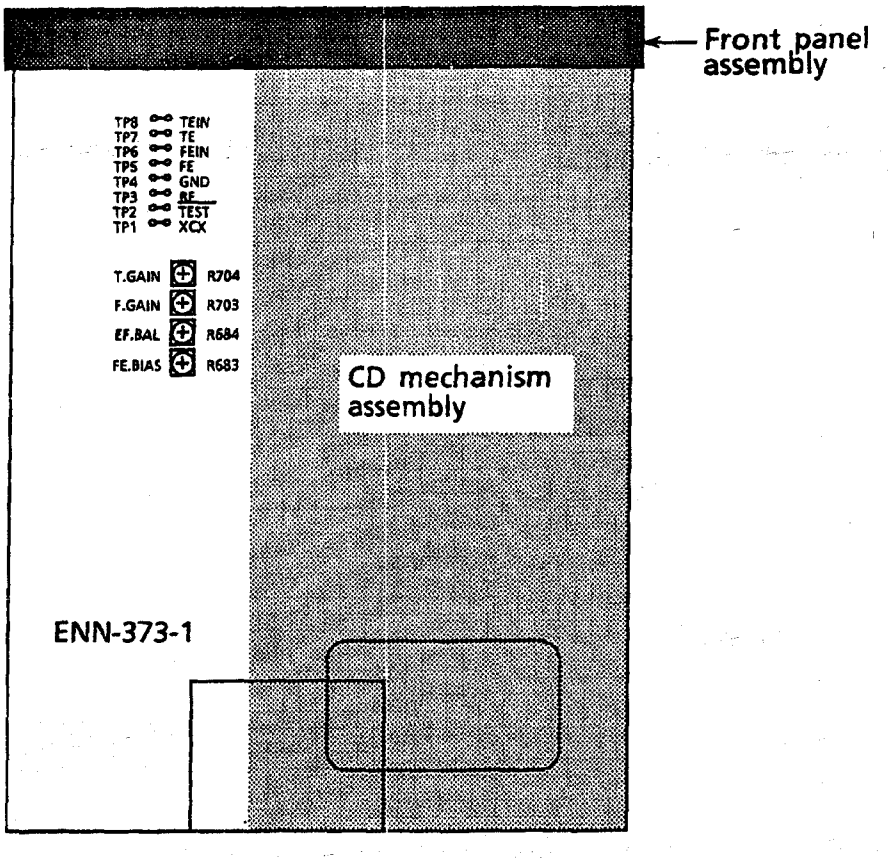


Figure 3

■ CD section



(1) Adjustment measure

Oscilloscope , Test disc (CRG-1117)

(2) Procedures

1) FE bias
   ① Connect a oscilloscope betweern TP5(FE) and TP4(GND).
   ② Adjust R683 so that the dc voltage at TP5 becomes 0±10mV.

2) EF balance
   ① Connect a oscilloscope between TP7(TE) and TP4(GND) and play the test disc.
   ② Connect TP2(TEST) with TP4(GND).
   ③ Adjust R684 so that the center voltage of the waveform becomes 0±0.05V.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

3) Gain adjustment

If the gain is out of adjustment, the symptoms below will appear.

● Gain too low

Focus gain	:	Focus is not obtained and disc does not rotate.
Tracking gain	:	Mechanical shock occurs easily and sound is interrupted. Or time counter display stops counting.

● Gain too high

Focus gain	:	Scratches (on the disc) easily interrupt play, and noise is increased during play.
Tracking gain	:	Since the follow-up ability of the pickup is too high, the pickup may oscillate and oscillating sound may output.

As described above, the focus and tracking gain adjustment are performed to satisfy mutually contradictory characteristics.
A simplified adjustment procedure is described below. However, since exact adjustment can not be performed prior to adjustments, note(or mark) the positions of the semi-fixed resistors.
If the positions after the adjustment are only different, return the VRs to their original position.

Focus gain adjustment

1. Connect an oscilloscope to TP 5(FE) and TP 4(GND).
2. Load the test disc and press the PLAY button.
3. Adjust R703 (F.GAIN ADJ.) so that the correct waveform as shown in figure 1 is obtain. (The dc offset may not occur.)

Tracking gain adjustment

1. Connect an oscilloscope to TP 7(TE) and TP 4(GND).
2. Load the test disc and press the PLAY button.
3. Adjust R704 (T.GAIN ADJ.) so that the correct waveform as shown in figure 2 is obtain.

Focus Gain Adjustment

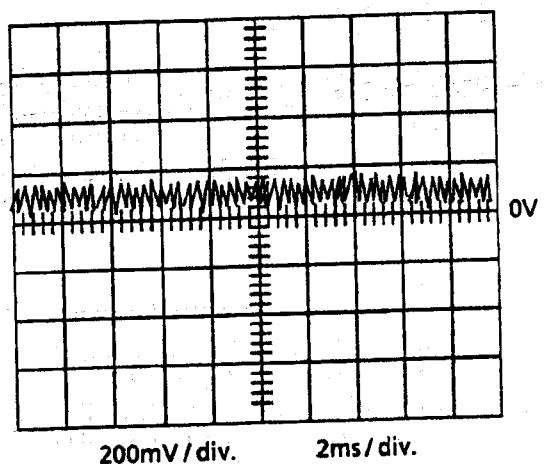


Figure 1

Tracking Gain Adjustment

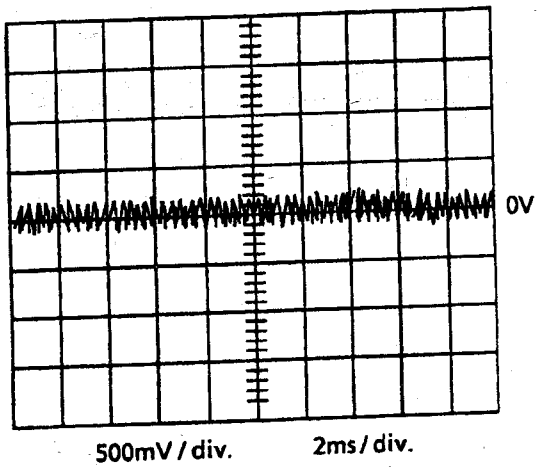
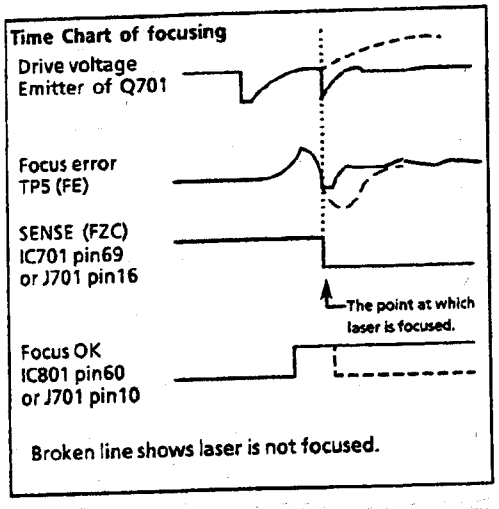
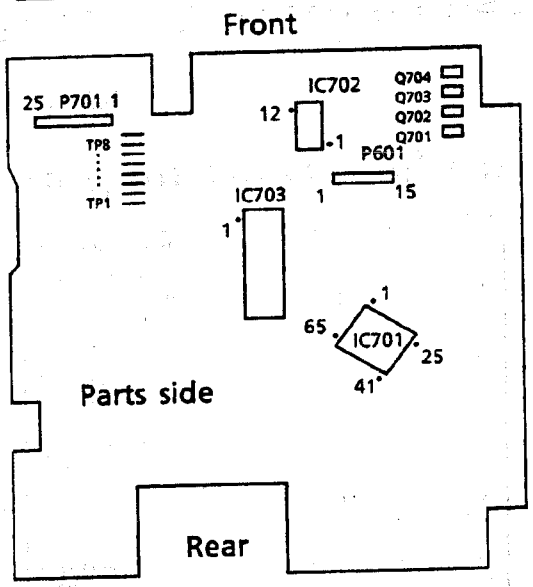
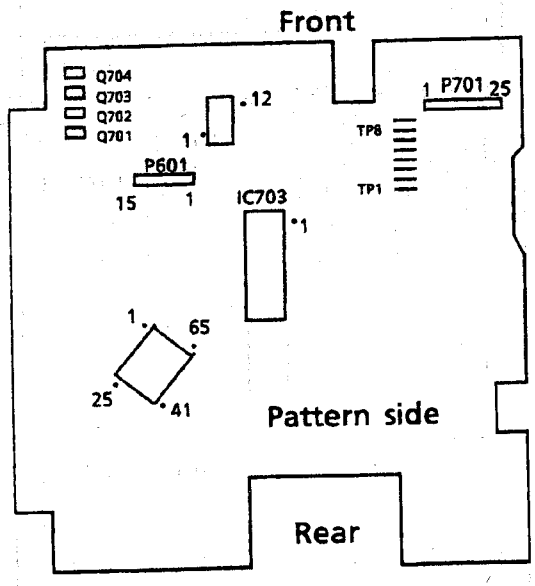


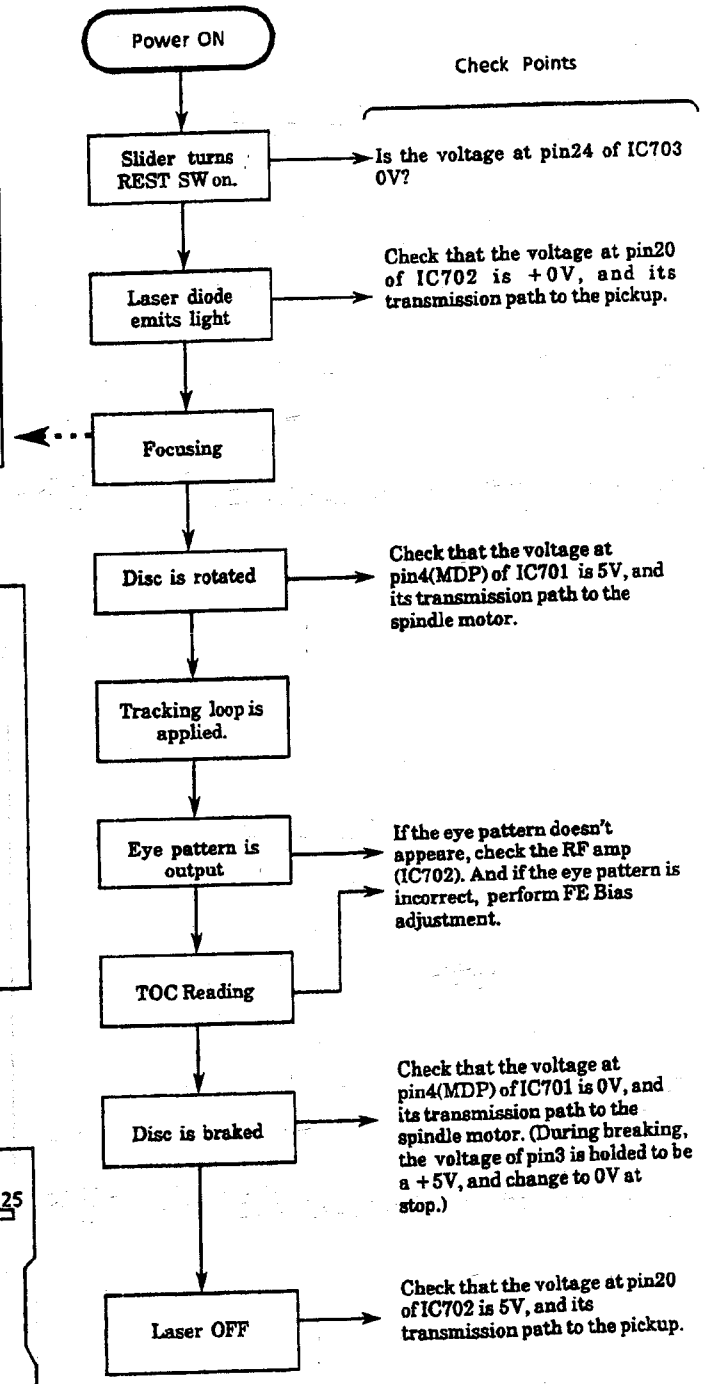
Figure 2

Flow of Functional Operation Until TOC is Read








Power ON
Check Points
Slider turns REST SW on.
Is the voltage at pin24 of IC703 0V?
Laser diode emits light
Check that the voltage at pin20 of IC702 is +0V, and its transmission path to the pickup.
Focusing
Disc is rotated
Check that the voltage at pin4(MDP) of IC701 is 5V, and its transmission path to the spindle motor.
Tracking loop is applied.
Eye pattern is output
If the eye pattern doesn't appeare, check the RF amp (IC702). And if the eye pattern is incorrect, perform FE Bias adjustment.
TOC Reading
Disc is braked
Check that the voltage at pin4(MDP) of IC701 is 0V, and its transmission path to the spindle motor. (During breaking, the voltage of pin3 is holded to be a +5V, and change to 0V at stop.)
Laser OFF
Check that the voltage at pin20 of IC702 is 5V, and its transmission path to the pickup.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

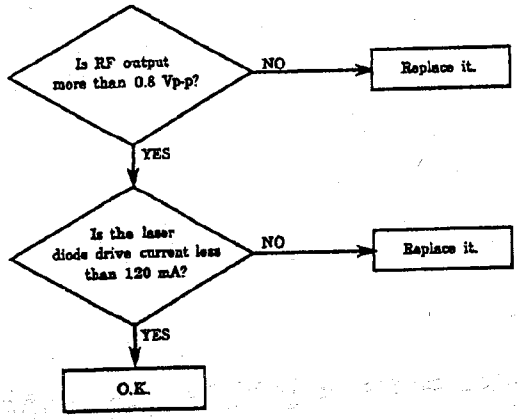
Maintenance of Laser Pickup

(1) Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

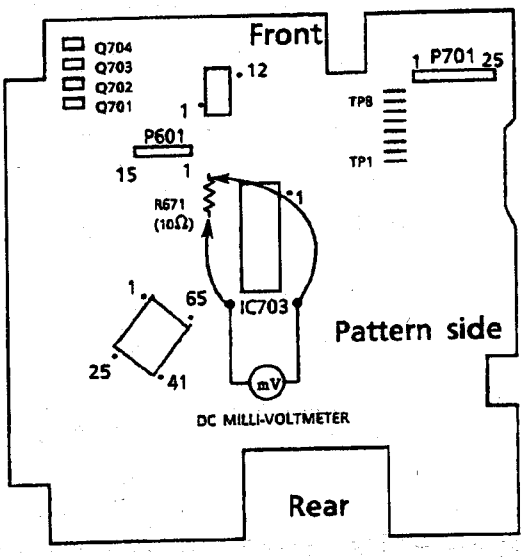
1. The level of RF output (EFM output: amplitude of eye pattern) will be low.
2. The drive current required by the laser diode will be increased.

In such a case, check the life of the laser diode by the flowchart below



(2) Measurement of laser diode drive current

Measure the voltage across the resistor R671 by using a milli-voltmeter. When the voltage is more than 1.2V, it shows that the life of the laser diode has expired.



(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

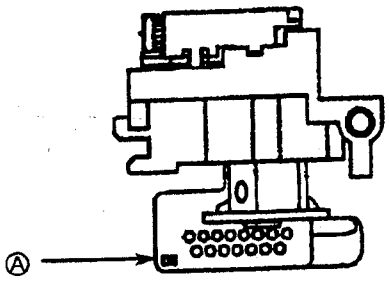
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

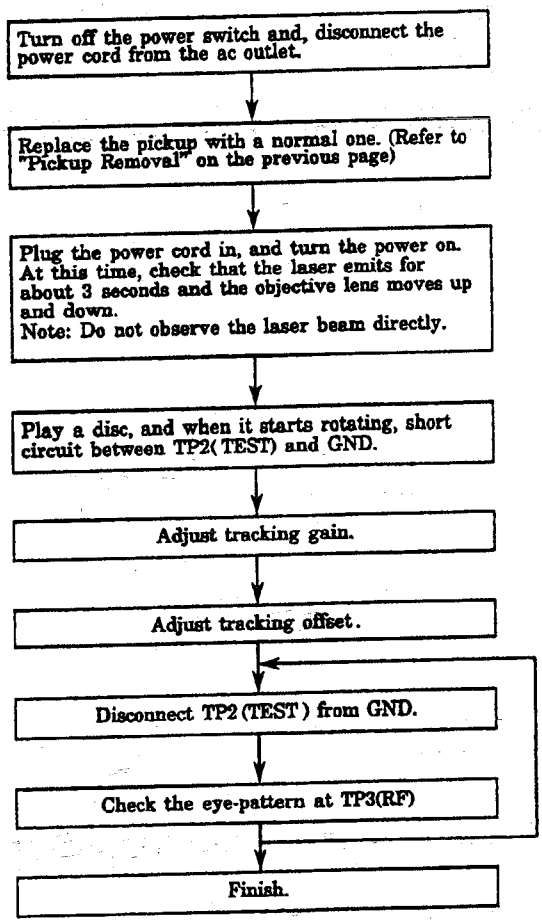
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

Before installing the pickup

Unsolder the part Ⓐ, which is used for countermeasure for static electricity.

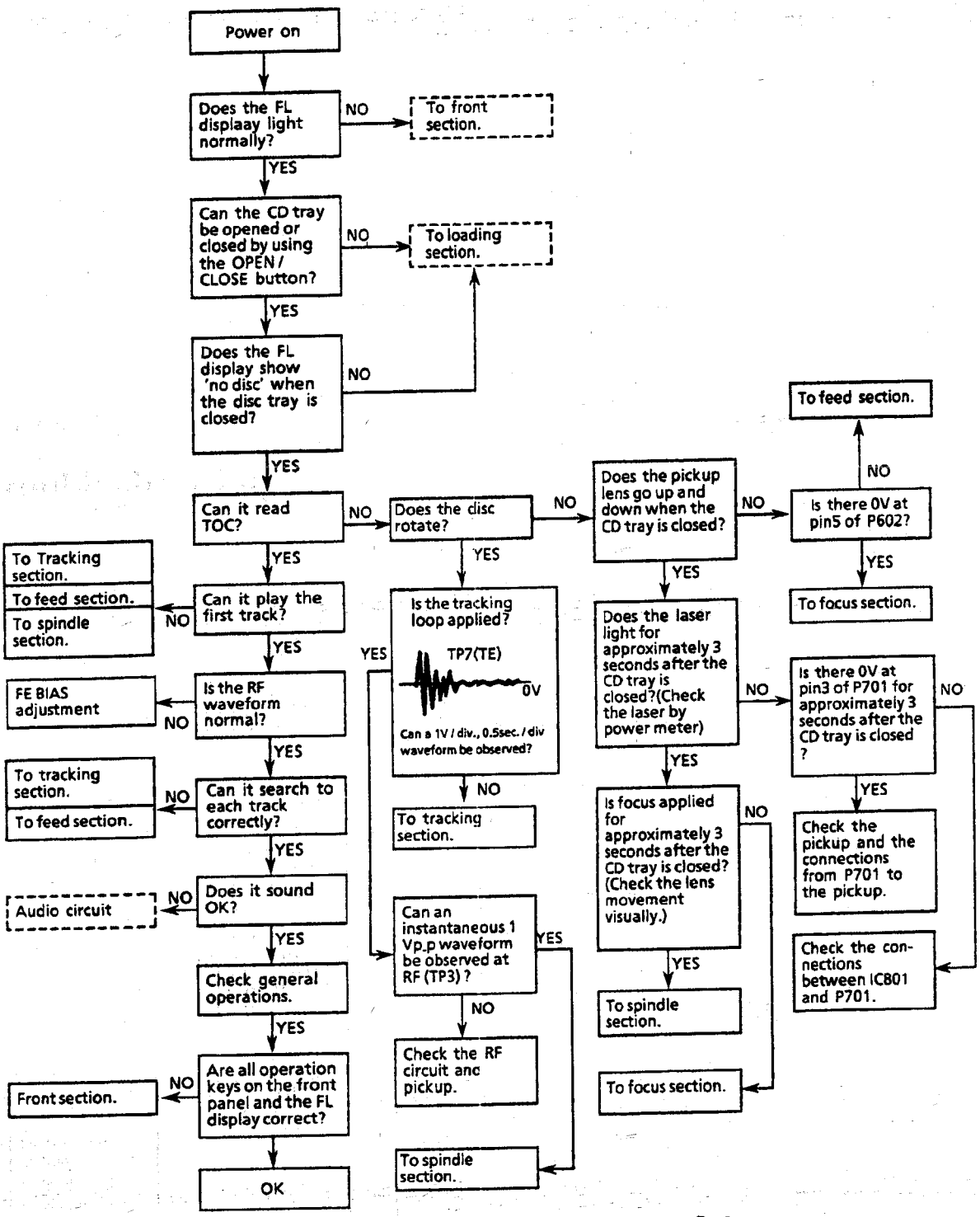



Turn off the power switch and, disconnect the power cord from the ac outlet.
Replace the pickup with a normal one. (Refer to "Pickup Removal" on the previous page)
Plug the power cord in, and turn the power on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc, and when it starts rotating, short circuit between TP2(TEST) and GND.
Adjust tracking gain.
Adjust tracking offset.
Disconnect TP2 (TEST) from GND.
Check the eye-pattern at TP3(RF)
Finish.

Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

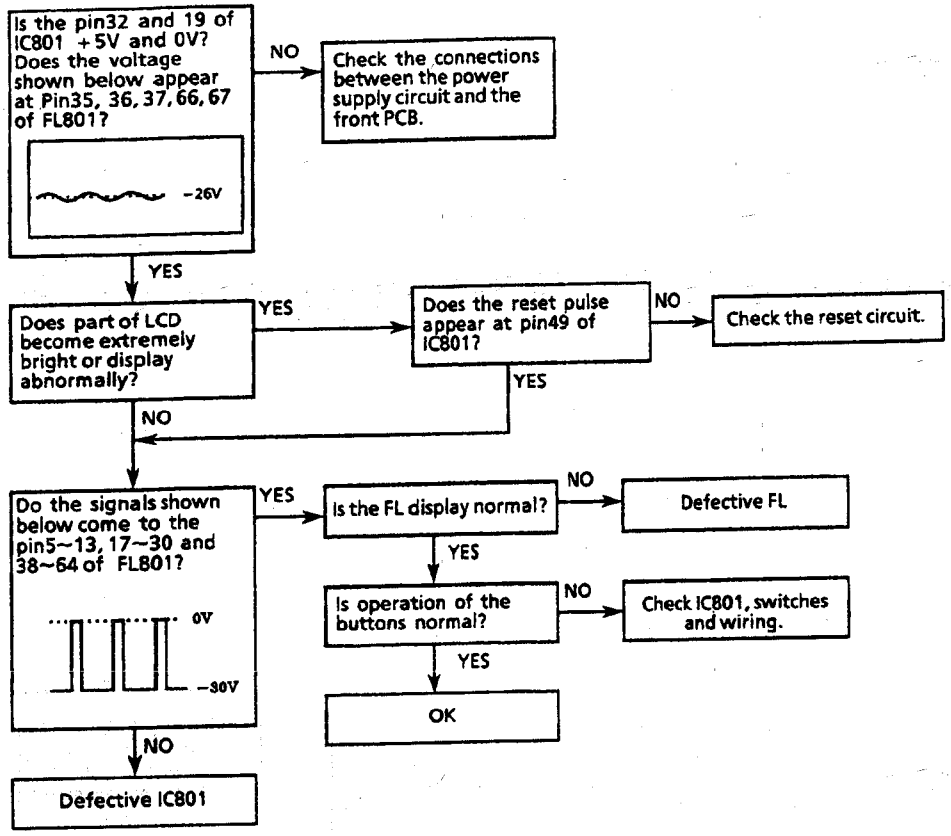
Troubleshooting

The following shows the status of the various circuits from turning on the power to the start of disc play .

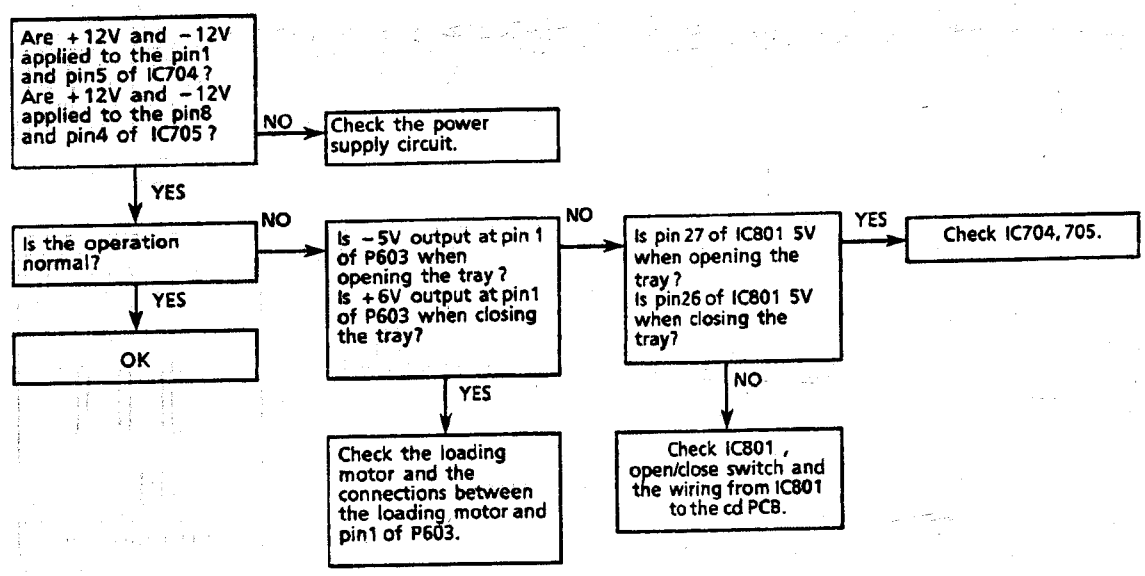

Power on
Does the FL displaay light normally?
NO
To front section.
YES
Can the CD tray be opened or closed by using the OPEN / CLOSE button?
NO
To loading section.
YES
Does the FL display show 'no disc' when the disc tray is closed?
NO
YES
Can it read TOC?
NO
Does the disc rotate?
NO
Does the pickup lens go up and down when the CD tray is closed?
NO
Is there 0V at pin5 of P602?
NO
To feed section.
YES
To focus section.
YES
To Tracking section.
To feed section.
To spindle section.
NO
Can it play the first track?
YES
Is the tracking loop applied?
YES
TP7(TE)
0V
Can a 1V / div., 0.5sec. / div waveform be observed?
NO
To tracking section.
Does the laser light for approximately 3 seconds after the CD tray is closed?(Check the laser by power meter)
NO
Is there 0V at pin3 of P701 for approximately 3 seconds after the CD tray is closed ?
NO
YES
Check the pickup and the connections from P701 to the pickup.
Check the con-nections between IC801 and P701.
FE BIAS adjustment
NO
Is the RF waveform normal?
YES
To tracking section.
To feed section.
NO
Can it search to each track correctly?
YES
Audio circuit
NO
Does it sound OK?
YES
Check general operations.
YES
Front section.
NO
Are all operation keys on the front panel and the FL display correct?
OK
Can an instantaneous 1 Vp.p waveform be observed at RF (TP3) ?
YES
NO
Check the RF circuit anc pickup.
To spindle section.
Is focus applied for approximately 3 seconds after the CD tray is closed? (Check the lens movement visually.)
NO
YES
To spindle section.
To focus section.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

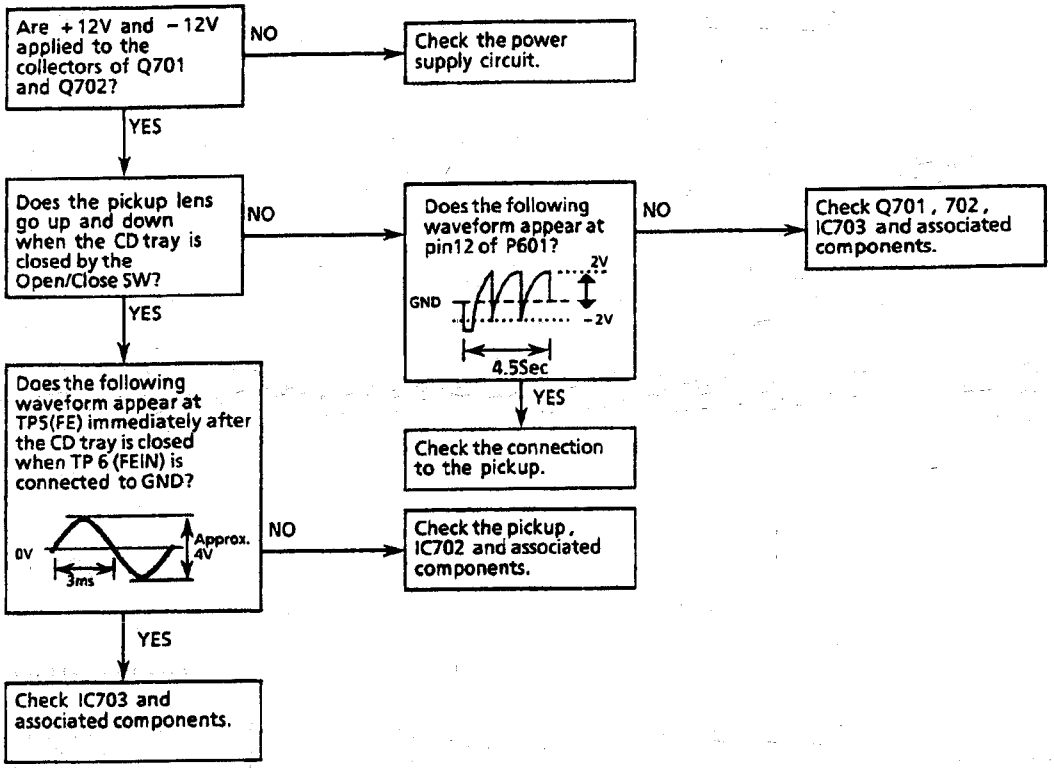
Front Section


Is the pin32 and 19 of IC801 +5V and 0V? Does the voltage shown below appear at Pin35, 36, 37, 66, 67 of FL801?
-26V
NO
Check the connections between the power supply circuit and the front PCB.
YES
Does part of LCD become extremely bright or display abnormally?
YES
Does the reset pulse appear at pin49 of IC801?
NO
Check the reset circuit.
YES
NO
Do the signals shown below come to the pin5~13, 17~30 and 38~64 of FL801?
0V
-30V
YES
Is the FL display normal?
NO
Defective FL
YES
Is operation of the buttons normal?
NO
Check IC801, switches and wiring.
YES
OK
NO
Defective IC801

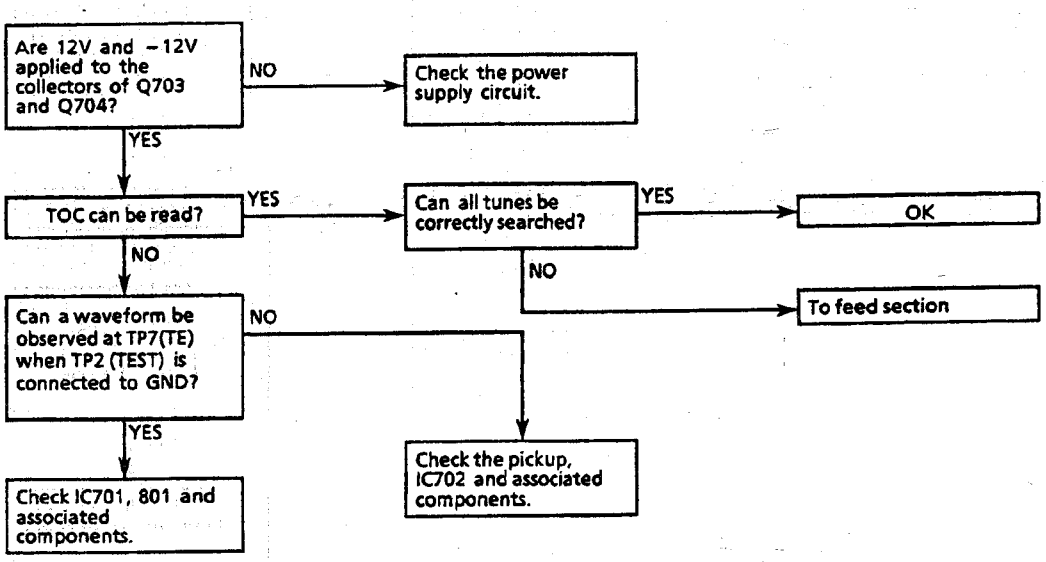
Loading section


Are +12V and -12V applied to the pin1 and pin5 of IC704? Are +12V and -12V applied to the pin8 and pin4 of IC705?
NO
Check the power supply circuit.
YES
Is the operation normal?
NO
YES
OK
Is -5V output at pin 1 of P603 when opening the tray? Is +6V output at pin1 of P603 when closing the tray?
NO
YES
Check the loading motor and the connections between the loading motor and pin1 of P603.
Is pin 27 of IC801 5V when opening the tray? Is pin26 of IC801 5V when closing the tray?
YES
Check IC704, 705.
NO
Check IC801, open/close switch and the wiring from IC801 to the cd PCB.

Focus section

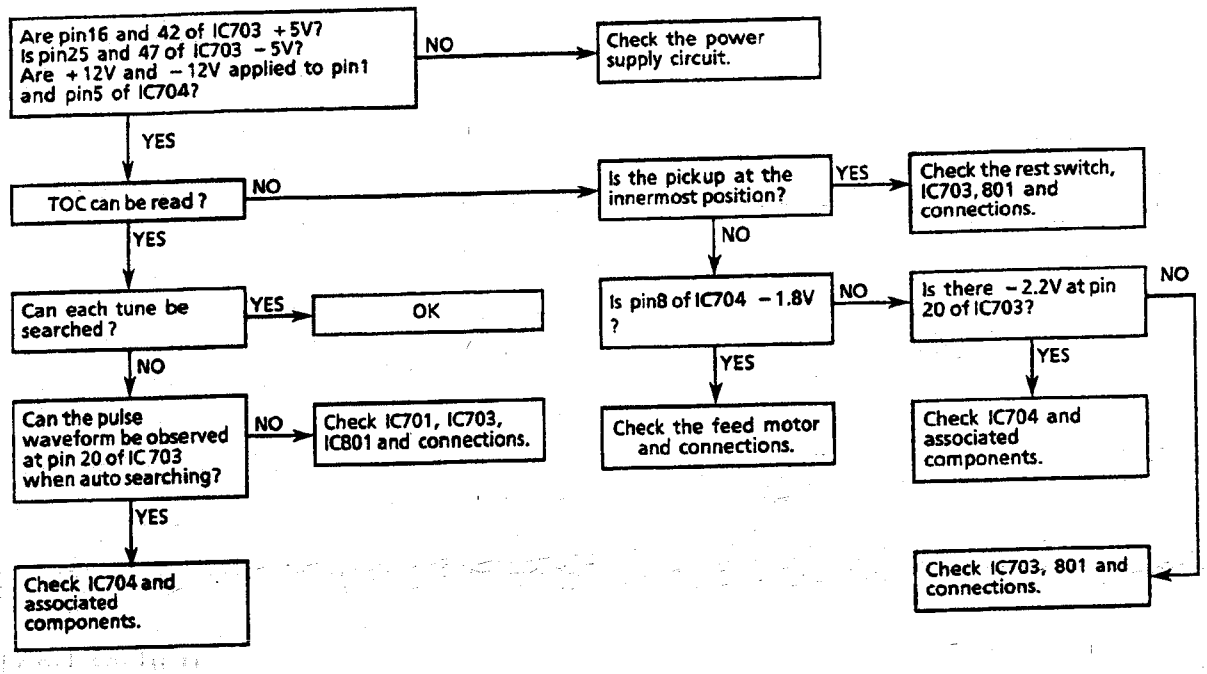

Are +12V and −12V applied to the collectors of Q701 and Q702?
NO
Check the power supply circuit.
YES
Does the pickup lens go up and down when the CD tray is closed by the Open/Close SW?
NO
Does the following waveform appear at pin12 of P601?
2V
GND
−2V
4.5Sec
NO
Check Q701, 702, IC703 and associated components.
YES
Check the connection to the pickup.
Does the following waveform appear at TP5(FE) immediately after the CD tray is closed when TP 6 (FEIN) is connected to GND?
0V
Approx. 4V
3ms
NO
Check the pickup, IC702 and associated components.
YES
Check IC703 and associated components.

Tracking section

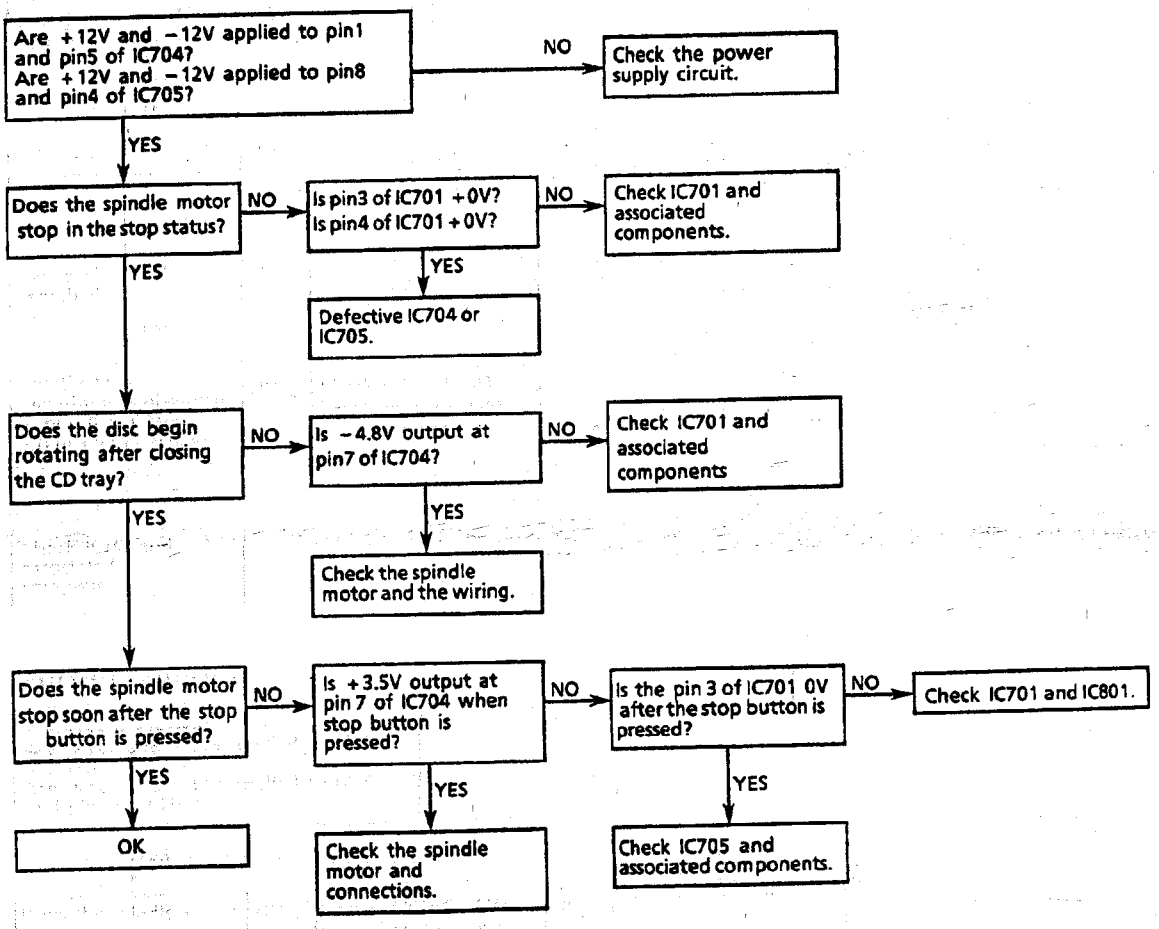


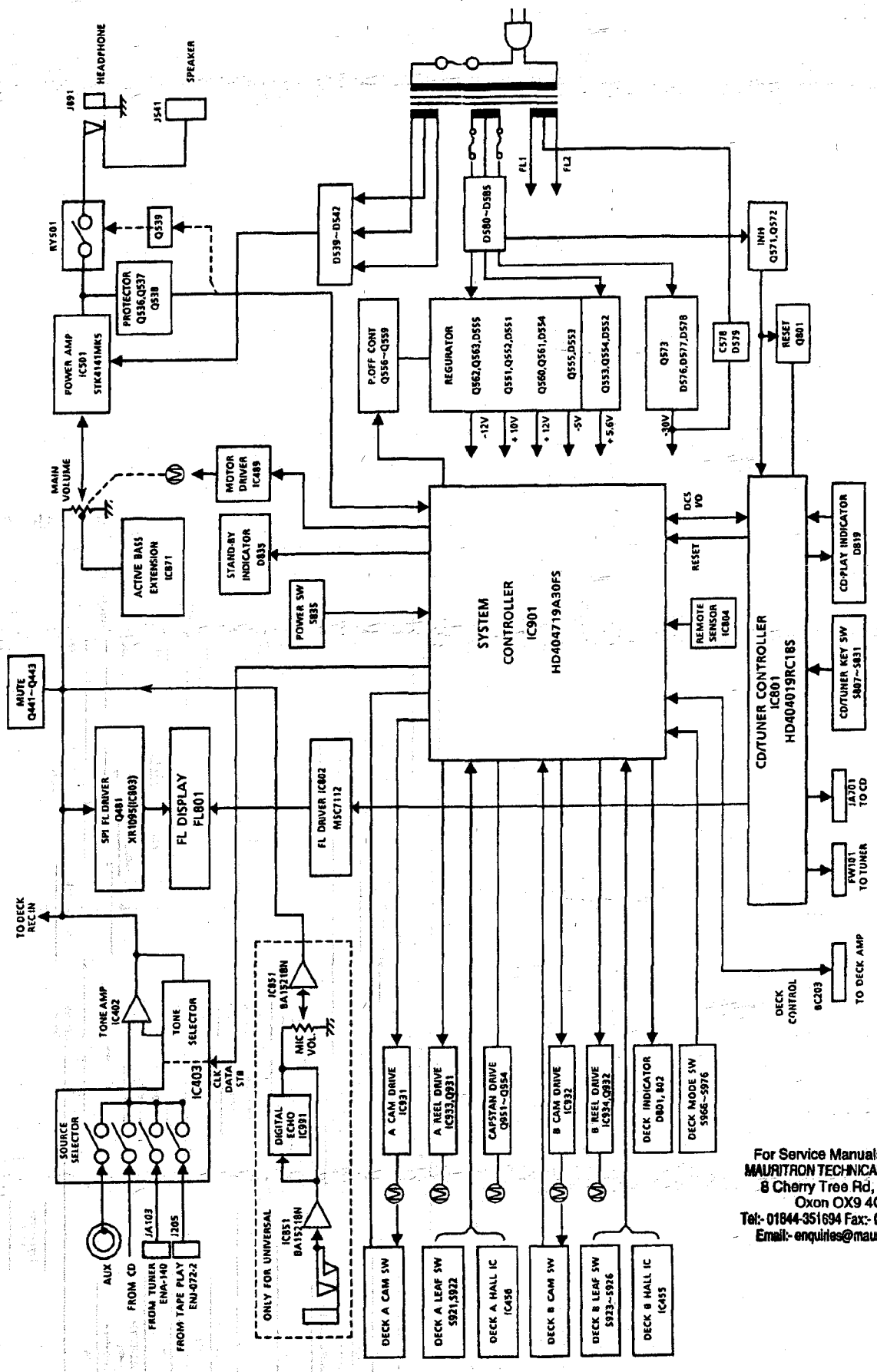
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Feed section


Are pin16 and 42 of IC703 +5V?
Is pin25 and 47 of IC703 −5V?
Are +12V and −12V applied to pin1 and pin5 of IC704?
NO
Check the power supply circuit.
YES
TOC can be read ?
NO
Is the pickup at the innermost position?
YES
Check the rest switch, IC703, 801 and connections.
YES
NO
Can each tune be searched ?
YES
OK
Is pin8 of IC704 −1.8V ?
NO
Is there −2.2V at pin 20 of IC703?
NO
NO
YES
YES
Can the pulse waveform be observed at pin 20 of IC 703 when auto searching?
NO
Check IC701, IC703, IC801 and connections.
Check the feed motor and connections.
Check IC704 and associated components.
YES
Check IC704 and associated components.
Check IC703, 801 and connections.

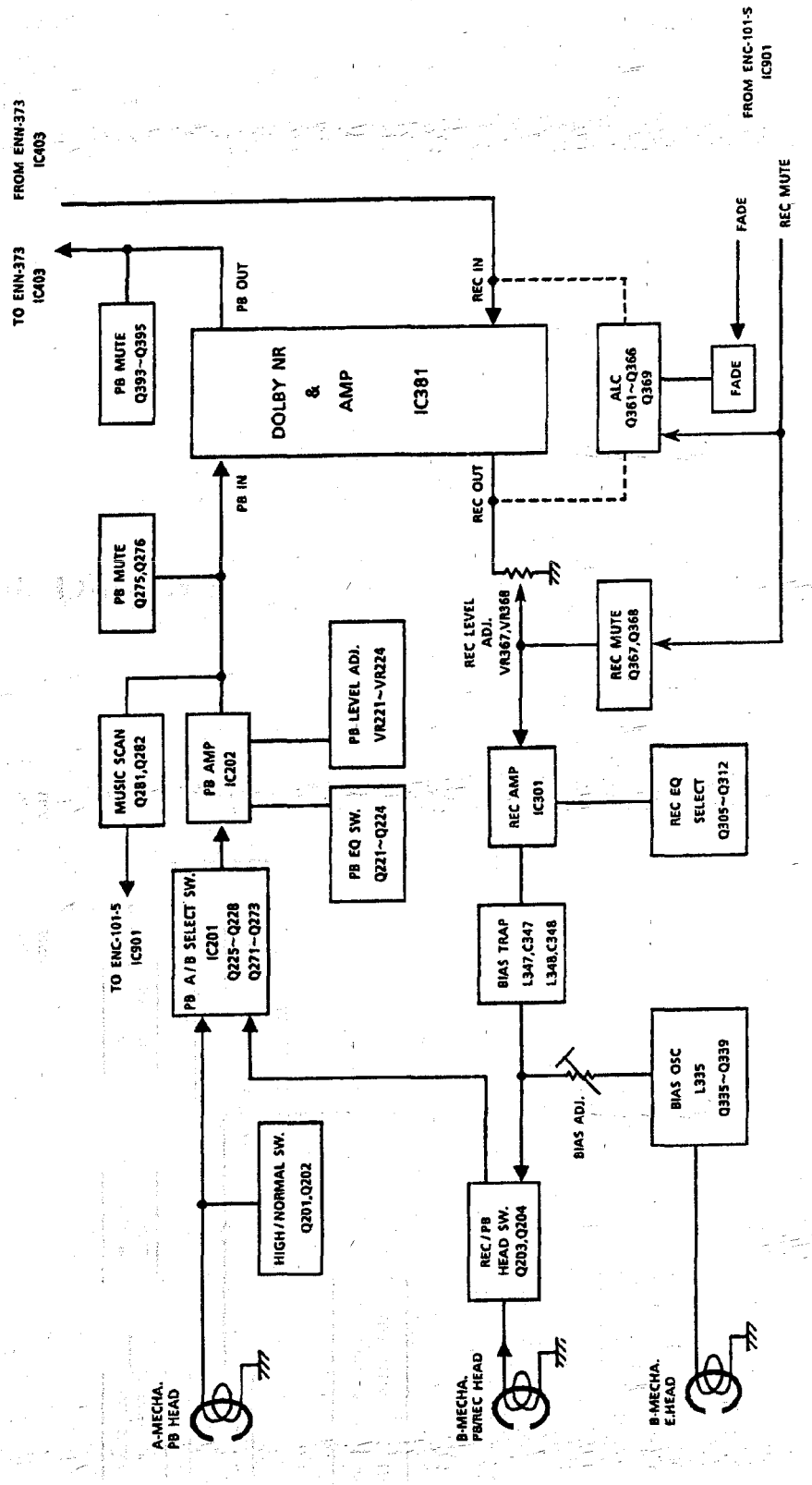
Spindle section

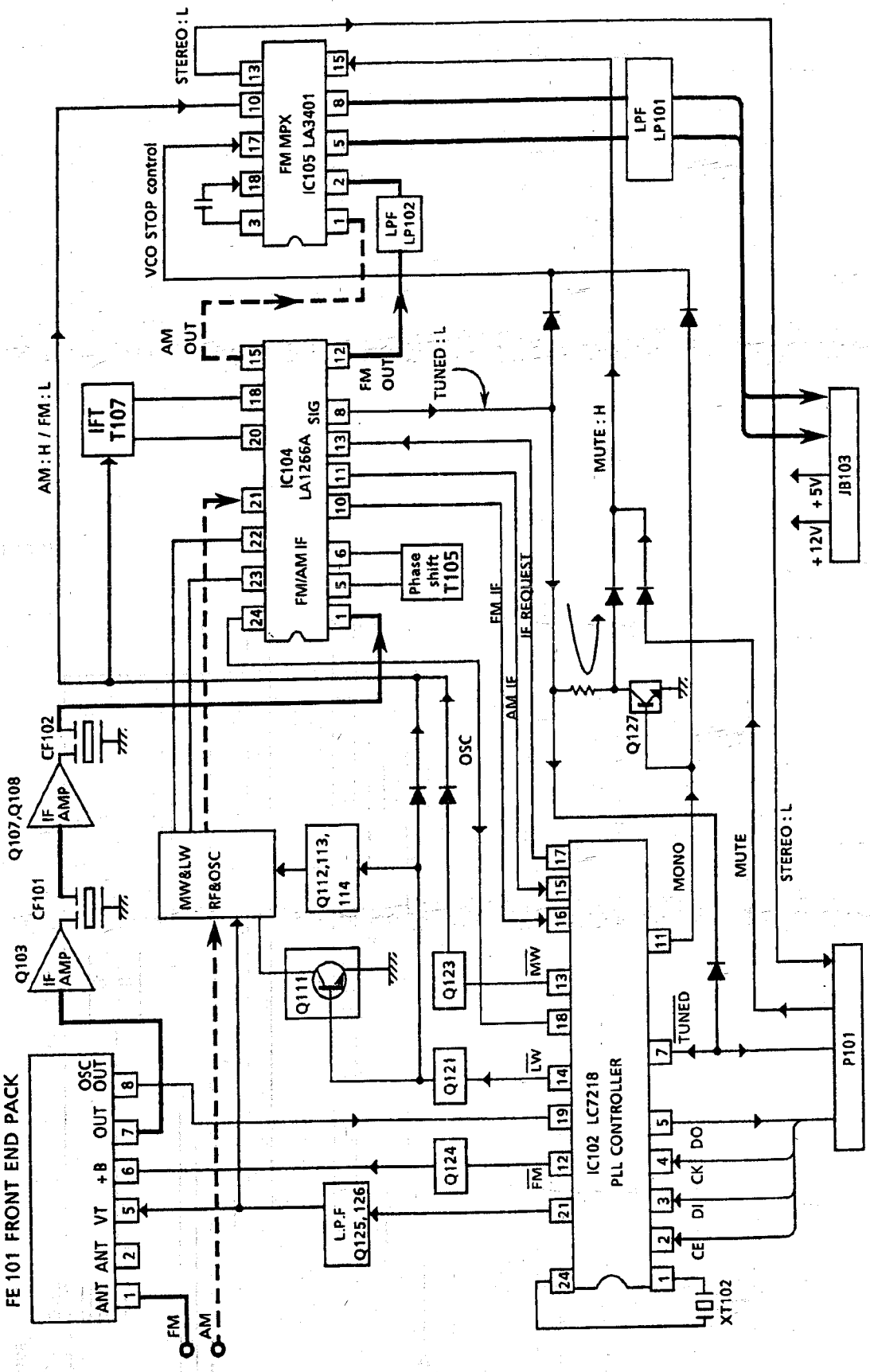

Are +12V and −12V applied to pin1 and pin5 of IC704?
Are +12V and −12V applied to pin8 and pin4 of IC705?
NO
Check the power supply circuit.
YES
Does the spindle motor stop in the stop status?
NO
Is pin3 of IC701 +0V?
Is pin4 of IC701 +0V?
NO
Check IC701 and associated components.
YES
YES
Defective IC704 or IC705.
Does the disc begin rotating after closing the CD tray?
NO
Is −4.8V output at pin7 of IC704?
NO
Check IC701 and associated components
YES
YES
Check the spindle motor and the wiring.
Does the spindle motor stop soon after the stop button is pressed?
NO
Is +3.5V output at pin 7 of IC704 when stop button is pressed?
NO
Is the pin 3 of IC701 0V after the stop button is pressed?
NO
Check IC701 and IC801.
YES
YES
YES
OK
Check the spindle motor and connections.
Check IC705 and associated components.



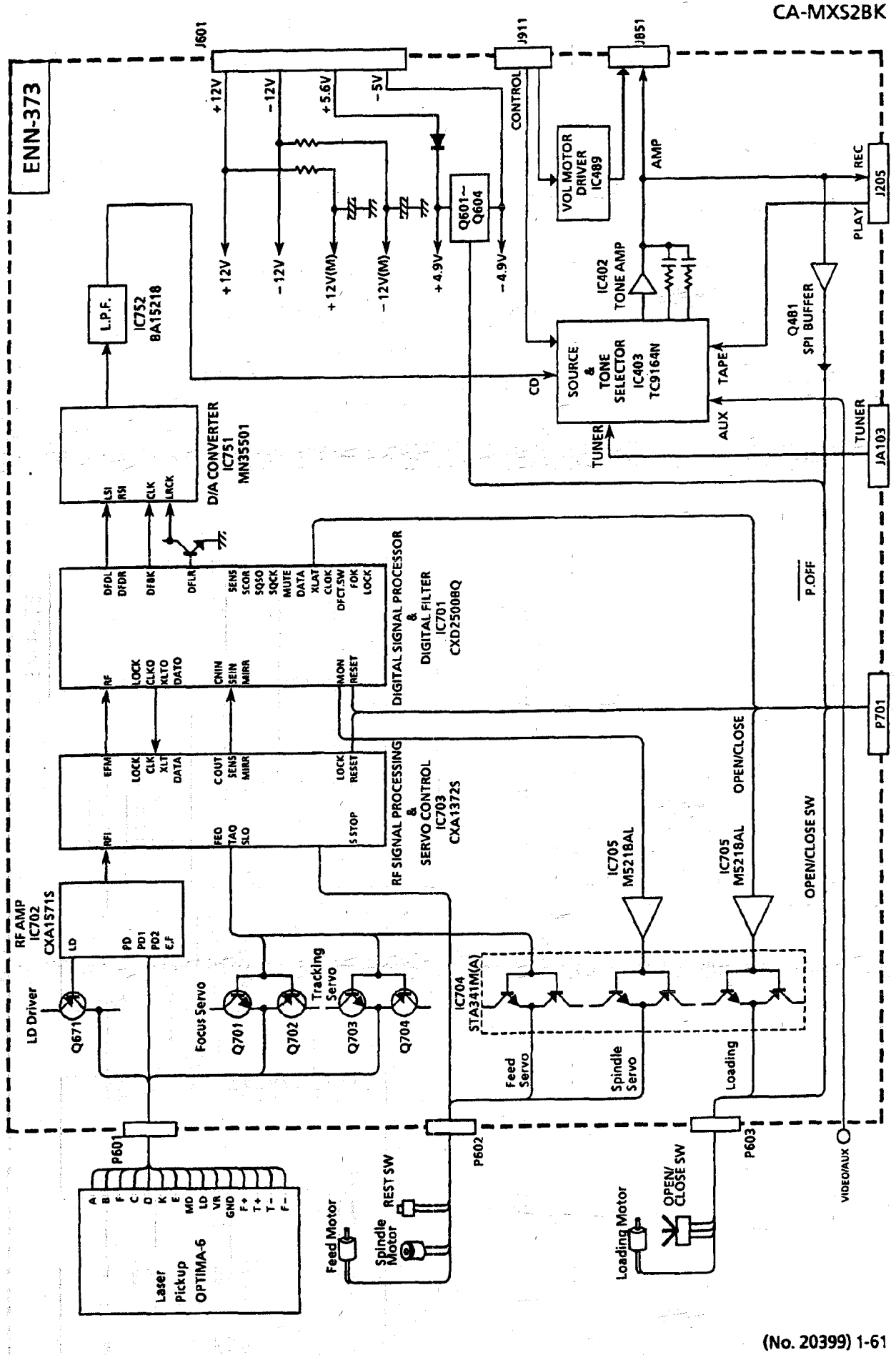
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Block Diagram





For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk


ENN-373
J601
J911
J851
+12V
-12V
+5.6V
-5V
CONTROL
VOL MOTOR DRIVER IC489
AMP
REC
J205
PLAY
Q601~ Q604
+12V
-12V
+12V(M)
-12V(M)
+4.9V
-4.9V
IC402 TONE AMP
L.P.F.
IC752 BA15218
Q481 SPI BUFFER
SOURCE & TONE SELECTOR IC403 TC9164N
CD
TAPE
AUX
TUNER
TUNER
JA103
D/A CONVERTER IC751 MN35501
LSI
RSI
CLK
LRCK
DIGITAL SIGNAL PROCESSOR & DIGITAL FILTER IC701 CXD2500BQ
DFDL
DFDR
DFBK
DFLR
SENS
SCOR
SQSO
SQCK
MUTE
DATA
XLAT
CLOK
DFCT.SW
FOK
LOCK
RF
LOCK
CLKO
XLTO
DATO
CNIN
SEIN
MIRR
MON
RESET
P.OFF
P701
RF SIGNAL PROCESSING & SERVO CONTROL IC703 CXA1372S
EFM
LOCK
CLK
XLT
DATA
COUT
SENS
MIRR
LOCK
RESET
RFI
FEO
TAO
SLO
S STOP
OPEN/CLOSE
OPEN/CLOSE SW
IC705 M5218AL
IC705 M5218AL
RF AMP IC702 CXA1571S
LD
PD
PD1
PD2
E,F
LD Driver
Q671
Focus Servo
Q701
Q702
Tracking Servo
Q703
Q704
IC704 STA341M(A)
Feed Servo
Spindle Servo
Loading
P601
P602
P603
A
B
F
C
D
K
E
MD
LD
VR
GND
F+
T+
T-
F-
Laser Pickup OPTIMA-6
Feed Motor
REST SW
Spindle Motor
Loading Motor
OPEN/ CLOSE SW
VIDEO/AUX

PARTS LIST

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Note : All printed circuit boards and its assemblies are not available as service parts.

Contents

General Exploded View and Parts List 2-2
Cassette Mechanism Ass'y and Parts List 2-9
CD Mechanism Ass'y and Parts List 2-12
Printed Circuit Board Ass'y and Parts List 2-14
■ ENJ-072 ☐ Power Supply & Deck PC Board Ass'y 2-14
■ ENC-101 ☐ Front & Deck Controller PC Board Ass'y 2-18
■ ENA-140 ☐ Tuner PC Board Ass'y 2-21
■ ENN-373 ☐ CD & Source Selector PC Board Ass'y 2-24
Accessories List 2-27
Packing Materials and Part Numbers 2-29

General Exploded View and Parts List

■ Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-CAMXS2BKJ(S	FRONT PANEL ASSY	1		J
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		C
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		A
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		BS
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		EF
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		EN
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		G
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		GI
		EFP-CAMXS2BKE(S	FRONT PANEL ASSY	1		VX
		EFP-CAMXS2BKU(S	FRONT PANEL ASSY	1		U
		EFP-CAMXS2BKU(S	FRONT PANEL ASSY	1		UT
	1-1	E102675-001SS	FRONT PANEL	1		U
		E102675-001SS	FRONT PANEL	1		UT
		E102675-002SS	FRONT PANEL	1		J
		E102675-002SS	FRONT PANEL	1		C
		E102675-002SS	FRONT PANEL	1		A
		E102675-002SS	FRONT PANEL	1		BS
		E102675-002SS	FRONT PANEL	1		EF
		E102675-002SS	FRONT PANEL	1		EN
		E102675-002SS	FRONT PANEL	1		G
		E102675-002SS	FRONT PANEL	1		GI
		E102675-002SS	FRONT PANEL	1		VX
	1-2	E308399-001SS	WINDOW SCREEN	1		C
		E308399-001SS	WINDOW SCREEN	1		A
		E308399-001SS	WINDOW SCREEN	1		BS
		E308399-001SS	WINDOW SCREEN	1		EF
		E308399-001SS	WINDOW SCREEN	1		EN
		E308399-001SS	WINDOW SCREEN	1		G
		E308399-001SS	WINDOW SCREEN	1		GI
		E308399-001SS	WINDOW SCREEN	1		VX
		E308399-001SS	WINDOW SCREEN	1		U
		E308399-001SS	WINDOW SCREEN	1		UT
		E308399-002SS	WINDOW SCREEN	1		J
	1-3	E69777-003	REFLECTION PLATE	2		
	1-4	E75130-008SS	FL SCREEN	1		J
	1-5	E406971-221	JVC MARK	1		
	2	E207554-002SA	CASSETTE LID ASSY	1	DECK A	
	2-1	E207554-002	CASSETTE LID	1	DECK A	
	2-2	E406971-221	JVC MARK	1	DECK A	
	3	E207557-002SS	CASSETTE LID ASSY	1	DECK B	
	4	E207560-002SS	CASSETTE HOLDER	1	DECK A	
	5	E207561-002SS	CASSETTE HOLDER	1	DECK B	
	6	E407269-002	EJECT SPRING	2		
	7	E406713-001	CASSETTE SPRING	4		
	8	E102358-332SS	CD TRAY	1		
	9	E207534-002SS	FITTING	1		
	10	SBSF3008M	SCREW	3		
	11	E304434-002	DAMPER ASSY	2		
	12	E308161-001SS	EJECT BUTTON	1	DECK B	
	13	E75737-008	BALANCE KNOB	1		U
		E75737-008	BALANCE KNOB	1		UT
	14	E308414-001SS	VOLUME KNOB	1		
	15	E207856-001SS	PUSH BUTTON ASSY	1	TUNNING / PRESET	
	16	E207855-001SS	PUSH BUTTON ASSY	1	OPEN / CLOSE , SEARCH	
	17	E308169-002	CIRCUIT BOARD BRACKET	1		

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	18	SDSF2608Z	SCREW	22		
	19	E207536-003SS	PUSH BUTTON ASSY	1	CD PLAY	
	20	E207774-001SS	PUSH BUTTON	1	BAND	J
		E207774-001SS	PUSH BUTTON	1	BAND	C
		E207774-001SS	PUSH BUTTON	1	BAND	A
		E207774-001SS	PUSH BUTTON	1	BAND	U
		E207774-001SS	PUSH BUTTON	1	BAND	UT
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	BS
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	EF
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	EN
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	G
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	GI
		E207774-002SS	PUSH BUTTON	1	BAND , MW / LW	VX
	21	E407210-001	REMOTE LENS	1		
	22	E407411-001SS	INDICATOR LENS	2		
	23	E207778-001SS	PUSH BUTTON	1	DECK	
	24	E308411-001SS	PUSH BUTTON	1	POWER	
	25	E407410-001SS	PUSH BUTTON	1		
	26	E308160-001SS	EJECT BUTTON	1	DECK A	
	27	SBST3008Z	SCREW	3		
	28	SBST3006M	SCREW	4		
	29	E75896-002	SPACER	2	FRONT FOOT	
	30	EWR617K-30TTJ2	FLAT WIRE	1		
	31	EWR125K-13TT	FLAT WIRE	1		
	32	E308402-001SS	STAY BRACKET	1		
	33	E207567-001SS	HOLDER BRACKET	1		
	34	E308162-002SS	EJECT LEVER	2		
	35	E407214-001	SPECIAL SCREW	4		
	36	GBSF3008Z	SCREW	2		
	37	------	CASSETTE MECHANISM ASSY	1	SEE PAGE 2-9	
	38	SBSF3010C	SCREW	4		
	39	SBST3008C	SCREW	4		
	40	SBSG3008N	SCREW	13		
		SBSG3008N	SCREW	1		U
		SBSG3008N	SCREW	1		UT
	41	E102616-003SS	CHASSIS BASE	1		
	42	E75896-006	FELT SPACER	2	REAR FOOT	
	43	E306805-078	FELT SPACER	2		G
		E306805-078	FELT SPACER	2		GI
	44	E308167-001SS	STAY BRACKET	1		
	45	E102617-001	CHASSIS BASE	1		
	46	------	CD MECHANISM ASSY	1	SEE PAGE 2-12	
	47	EWS265-8408	SOCKET WIRE	1	5PIN	
	48	SBST3006Z	SCREW	3		
	49	EWR615M-14BBJ2	FLAT WIRE	1	15PIN	
	50	EWS266-8412	SOCKET WIRE	1	6PIN	
	51	E406293-002	SPECIAL SCREW	1		
	52	E306837-005	CLAMPER ASSY	1		
	52-1	E306836-003	YOKE PLATE	1		
	52-2	E74897-002	MAGNET	1		
	52-3	E26756-002	CLAMPER BASE	1		
	52-4	E306835-001	CD CLAMPER	1		
	53	E207564-001	METAL COVER	1		
	54	SDSG3006M	SCREW	6		
	55	E308522-026	RATING LABEL	1		UT

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax- 01844-352554
Email:- enquiries@mauritron.co.uk

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	56	SBSG3014Z	SCREW	4		
	57	E406969-221	LEAF SPRING	1		
	58	E307908-001SS	HEAT SINK	1		
⚠	59	ETP1070-33JAJ	POWER TRANSFORMER	1		J
⚠		ETP1070-33JAJ	POWER TRANSFORMER	1		C
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		A
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		EF
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		EN
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		G
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		GI
⚠		ETP1070-33EAJ	POWER TRANSFORMER	1		VX
⚠		ETP1070-33EAJBS	POWER TRANSFORMER	1		BS
⚠		ETP1070-33FAJ	POWER TRANSFORMER	1		U
⚠		ETP1070-33FAJ	POWER TRANSFORMER	1		UT
	60	E65389-004	SPECIAL SCREW	4		
⚠	61	QMF0007-1R6J1	FUSE	2	F101,F102 (T1.6A/125V)	J
⚠		QMF0007-1R6J1	FUSE	2	F101,F102 (T1.6A/125V)	C
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	A
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	EF
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	EN
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	G
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	GI
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	U
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	UT
⚠		QMF51E2-1R25J1	FUSE	2	F101,F102 (T1.25A/250V)	VX
⚠		QMF51E2-1R2J1BS	FUSE	2	F101,F102 (T1.2A/250V)	BS
⚠	62	QMF0007-2R0J1	FUSE	1	F001 (T2.0A/125V)	J
⚠		QMF0007-2R0J1	FUSE	1	F001 (T2.0A/125V)	C
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	A
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	EF
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	EN
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	G
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	GI
⚠		QMF51E2-1R0J1	FUSE	1	F001 (T1.0A/250V)	VX
⚠		QMF51E2-1R0J1BS	FUSE	1	F001 (T1.0A/250V)	BS
⚠		QMF51E2-2R0J1	FUSE	1	F001 (T2.0A/250V)	U
⚠		QMF51E2-2R0J1	FUSE	1	F001 (T2.0A/250V)	UT
⚠	63	QMF51E2-1R0J1	FUSE	1	F002 (T1.0A/250V)	U
⚠		QMF51E2-1R0J1	FUSE	1	F002 (T1.0A/250V)	UT
	64	E207780-004SS	REAR PANEL	1		A
		E207780-005SS	REAR PANEL	1		BS
		E207780-006SS	REAR PANEL	1		EF
		E207780-006SS	REAR PANEL	1		EN
		E207780-006SS	REAR PANEL	1		G
		E207780-006SS	REAR PANEL	1		GI
		E207780-007SS	REAR PANEL	1		U
		E207780-007SS	REAR PANEL	1		UT
		E207780-008SS	REAR PANEL	1		J
		E207780-010SS	REAR PANEL	1		VX
		E207780-014SS	REAR PANEL	1		C
	65	E73273-003	SPECIAL SCREW	4		
		E73273-003	SPECIAL SCREW	2		U
		E73273-003	SPECIAL SCREW	2		UT
	66	SXST3006M	SCREW	9		
	67	E207356-222	REAR COVER	1		J

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
		E207356-223SS	REAR COVER	1		C
		E207356-223SS	REAR COVER	1		A
		E207356-223SS	REAR COVER	1		BS
		E207356-223SS	REAR COVER	1		EF
		E207356-223SS	REAR COVER	1		EN
		E207356-223SS	REAR COVER	1		G
		E207356-223SS	REAR COVER	1		GI
		E207356-223SS	REAR COVER	1		VX
		E207356-223SS	REAR COVER	1		U
		E207356-223SS	REAR COVER	1		UT
⚠	68	QMP1D00-200H	POWER CORD	1		J
⚠		QMP1D00-200H	POWER CORD	1		C
⚠		QMP25F0-244	POWER CORD	1		A
⚠		QMP3900-200	POWER CORD	1		EF
⚠		QMP3900-200	POWER CORD	1		EN
⚠		QMP3900-200	POWER CORD	1		G
⚠		QMP3900-200	POWER CORD	1		GI
⚠		QMP3900-200	POWER CORD	1		VX
⚠		QMP5530-0085BS	POWER CORD	1		BS
⚠		QMP7520-200	POWER CORD	1		U
⚠		QMP7520-200	POWER CORD	1		UT
⚠	69	QHS3876-162	CORD STOPPER	1		J
⚠		QHS3876-162	CORD STOPPER	1		EF
⚠		QHS3876-162	CORD STOPPER	1		A
⚠		QHS3876-162	CORD STOPPER	1		C
⚠		QHS3876-162	CORD STOPPER	1		EN
⚠		QHS3876-162	CORD STOPPER	1		G
⚠		QHS3876-162	CORD STOPPER	1		GI
⚠		QHS3876-162	CORD STOPPER	1		VX
⚠		QHS3876-162	CORD STOPPER	1		U
⚠		QHS3876-162	CORD STOPPER	1		UT
⚠		QHS3876-162BS	CORD STOPPER	1		BS
	70	E306805-087	SPACER	1		
	71	E308548-002SS	SHIELD BRACKET	1		
	72	E48729-008	PLASTIC RIVET	1		
	73	E407304-001	SPRING	2		
	74	E306805-085	SPACER	1		G
		E306805-085	SPACER	1		GI
	—	E307570-001	NUMBER LABEL	1		J
		E61029-005	NUMBER LABEL	1		C
		E61029-005	NUMBER LABEL	1		A
		E61029-005	NUMBER LABEL	1		BS
		E61029-005	NUMBER LABEL	1		EF
		E61029-005	NUMBER LABEL	1		EN
		E61029-005	NUMBER LABEL	1		G
		E61029-005	NUMBER LABEL	1	For Service Manuals Contact MAURITRON TECHNICAL SERVICES 8 Cherry Tree Rd, Chinnor Oxon OX9 4QY Tel:- 01844-351694 Fax:- 01844-352554 Email:- enquiries@mauritron.co.uk	GI
		E61029-005	NUMBER LABEL	1		VX
		E61029-005	NUMBER LABEL	1		U
		E61029-005	NUMBER LABEL	1		UT
	—	E67199-001	CAUTION LABEL	2		J
		E65507-001	CAUTION LABEL	2		C
	—	E406507-001	CAUTION LABEL	1		C
		E406507-001	CAUTION LABEL	1		A
		E406507-001	CAUTION LABEL	1		BS
		E406507-001	CAUTION LABEL	1		EF

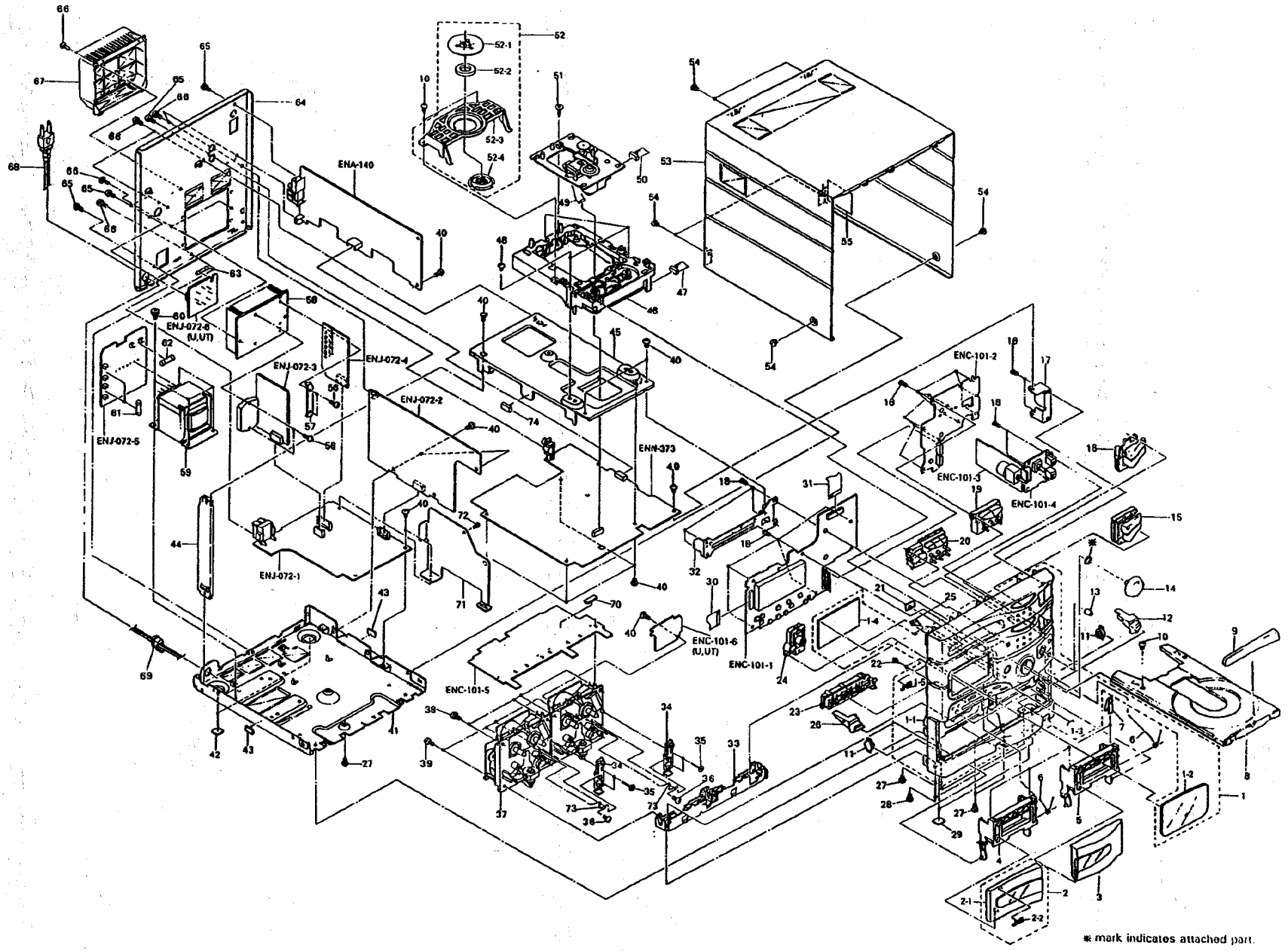
⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
		E406507-001	CAUTION LABEL	1		EN
		E406507-001	CAUTION LABEL	1		G
		E406507-001	CAUTION LABEL	1		GI
		E406507-001	CAUTION LABEL	1		VX
		E406507-001	CAUTION LABEL	1		U
		E406507-001	CAUTION LABEL	1		UT
	—	E70891-001	CLASS 1 LABEL	1		A
		E70891-001	CLASS 1 LABEL	1		BS
		E70891-001	CLASS 1 LABEL	1		EF
		E70891-001	CLASS 1 LABEL	1		EN
		E70891-001	CLASS 1 LABEL	1		G
		E70891-001	CLASS 1 LABEL	1		GI
		E70891-001	CLASS 1 LABEL	1		VX
		E70891-001	CLASS 1 LABEL	1		U
		E70891-001	CLASS 1 LABEL	1		UT
	—	E45858-002	CSA LABEL	1		C
	—	QZL1031-101	APPROVAL LABEL	1		EF
	—	E70027-001	SEV LABEL	1		EN

⚠ SAFETY PARTS

The Marks for Designated Areas

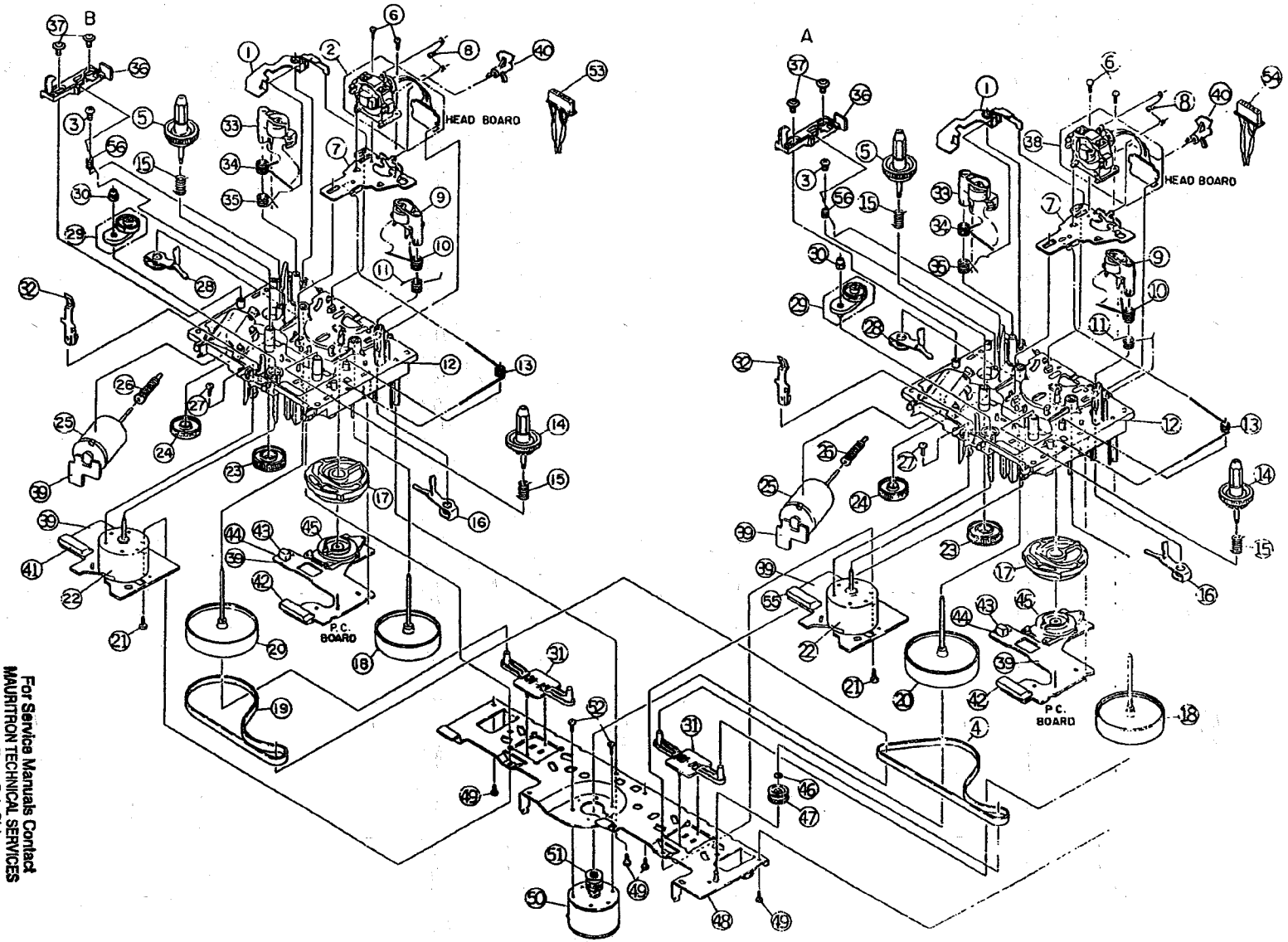
J ..... the U.S.A.
EF .... Continental Europe
GI .... Itary
C ..... Canada
BS ..... the U.K.
UT .... Taiwan
A ..... Australia
G ..... Germany
U ..... Universal Type
EN .... Scandinavia
VX ... East Europe
No mark indicates all areas.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk



* mark indicates attached part.

Cassette Mechanism Ass'y and Parts List

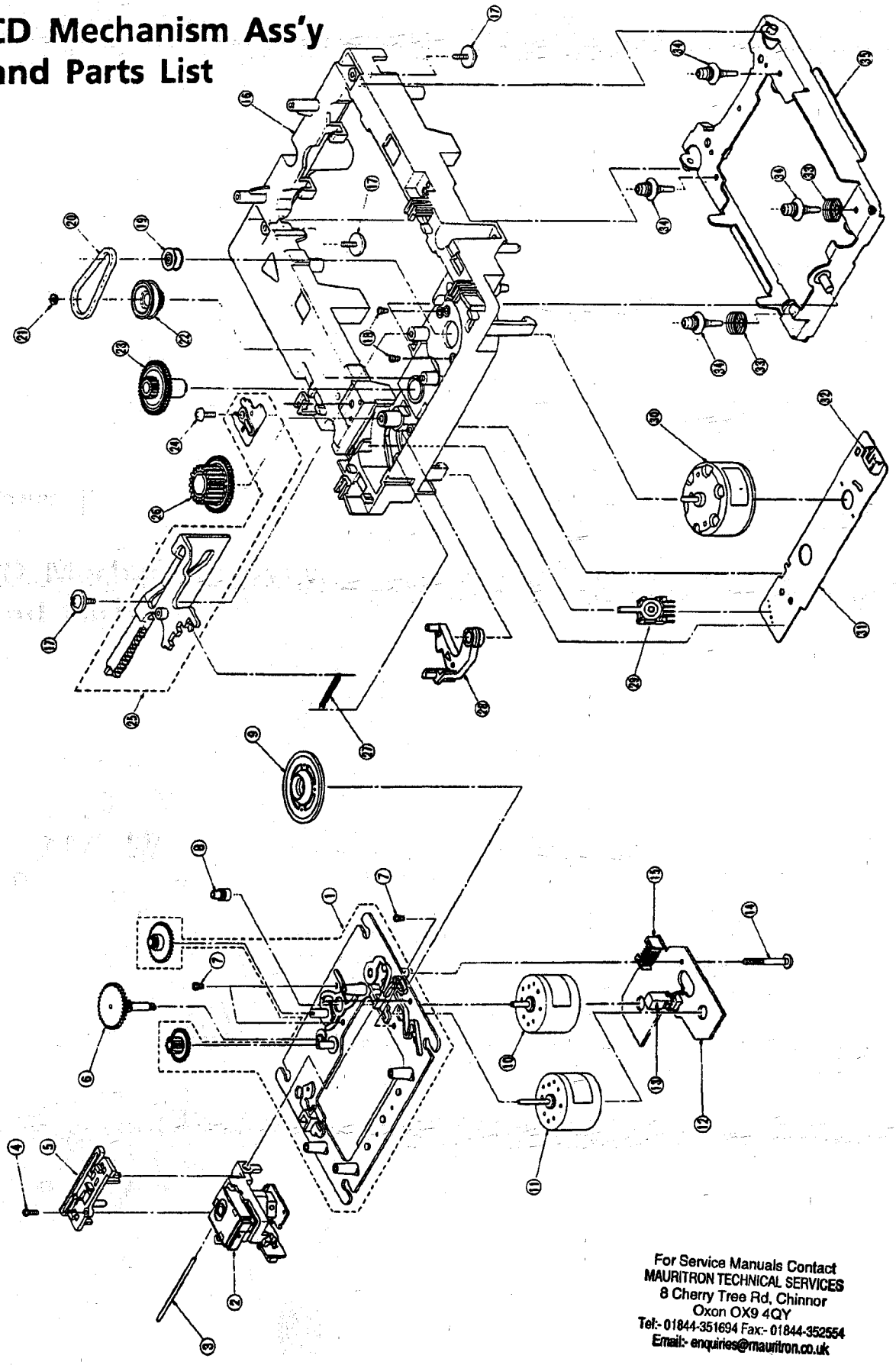


For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

■ Parts List (Cassette Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	VKL7246-001	EJECT BRACKET	2		
2	VKS3551-008	HEAD MOUNT ASS'Y	1	(B)	
3	GBSF3008Z	SCREW	2		
4	VKB3001-054	BELT	1	(A)	
5	VKS5321-00D	REEL ASS'Y	2	RIGHT	
6	SDST2004Z	SCREW	4	FOR HEAD MOUNT ASSY	
7	VKL6942-00E	HEAD BASE ASS'Y	2		
8	VKW4994-001	HEAD SPRING	2		
9	VKP4221-00C	PINCH ROLLER	2	LEFT	
10	VKW4982-001	TORSION SPRING	2	LEFT	
11	VKW4933-005	TORSION SPRING	2	LEFT	
12	VKS1125-00A	CHASSIS BASE ASS'Y	2		
13	VKW4930-002	RETURN SPRING	2		
14	VKS3480-005	REEL ASS'Y	2	LEFT	
15	VKW4928-003	B.T. SPRING	4	FOR REEL ASSY	
16	VKL6940-002	PINCH ROLLER LEVER	2	LEFT	
17	VKS2209-005	CONTROL CAM	2		
18	VKF3186-00C	FLYWHEEL ASS'Y	2	LEFT	
19	VKB3001-055	BELT	1	(B)	
20	VKF3184-00C	FLYWHEEL ASS'Y	2	RIGHT	
21	SDSF2608Z	SCREW	2	PC BOARD-FM BRACKET	
22	MMN-6F4RA38	D.C. MOTOR	2	REEL	
23	VKS5331-002	GEAR	2		
24	VKS5330-004	GEAR	2		
25	MXN-13FB12F	D.C. MOTOR	2	CAM	
26	VKS5329-002	GEAR	2		
27	SDSP2605Z	SCREW	2	CHASSIS BASE-D.C.MOTOR	
28	VKL6939-002	PINCH ROLLER LEVER	2	RIGHT	
29	VKS5325-00F	F.F/REW.ARM ASS'Y	2		
30	VKS5328-002	REEL MOTOR GEAR	2		
31	VKS5327-003	THRUST PLATE	2		
32	VKY4628-002	SPRING	2		
33	VKP4219-00C	PINCH ROLLER ASS'Y	2	RIGHT	
34	VKW4981-001	TORSION SPRING	2	RIGHT	
35	VKW4932-005	TORSION SPRING	2	RIGHT	
36	E308162-001	EJECT LEVER	2		
37	E407214-001	SPECIAL SCREW	4		
38	VKS3550-008	HEAD MOUNT ASS'Y	1	(A)	
39	VMW2362-001	CIRCUIT BOARD	2		
40	VKS3485-002	HEAD GEAR	2		
41	VMC0234-R08	CONNECTOR	1	(B)	
42	VMC0234-R07	CONNECTOR	2		
43	DN6851A	I.C.	2		
44	VKS3487-002	IC HOLDER	2		
45	VKS3587-00A	CAM SWITCH ASS'Y	2		
46	WDL163525-4	WASHER	1		
47	VKR4631-003	IDLER PULLEY	1		
48	VKM3618-00A	FM BRACKET	1		
49	SDSF2605Z	SCREW	4	CHASSIS BASE-FM BRACKET	
50	MMI-6H2LWSK	MOTOR	1	CAPSTAN	
51	VKR4632-002	MOTOR PULLEY	1		
52	SPSP2603Z	SCREW	2		
53	VDM007P-024I	HEAD WIRE	1	(B)	
54	VDM003P-040I	HEAD WIRE	1	(A)	
55	VMC0234-R04	CONNECTOR	1	(A)	
56	E407304-001	SPRING	2		

CD Mechanism Ass'y and Parts List



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

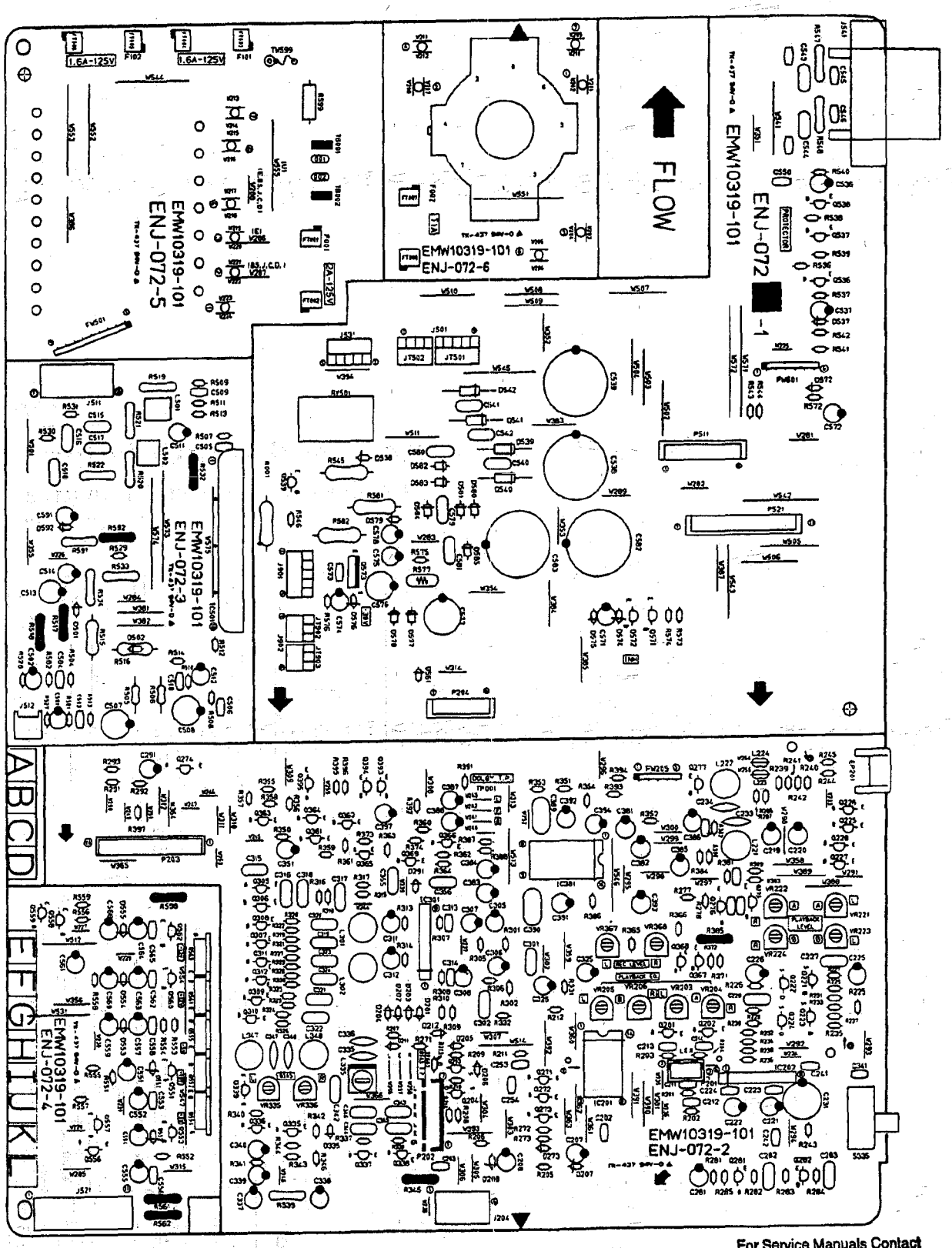
■ Parts List (CD Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	EPB-002A	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASS'Y	1		
3	E406777-001	SHAFT	1		
4	SDSF2006Z	SCREW	1		
5	E307746-001	CD RACK	1		
6	EPB-003A	MECHANISM BASE ASSY	1		
7	SDSP2003N	SCREW	4		
8	E406750-001	PINION GEAR	1		
9	EPB-001C	TURNTABLE	1		
10	E406784-001	DC MOTOR	1		
11	E406783-001	DC MOTOR	1		
12	EMW10190-001(S)	CIRCUIT BOARD	1		
13	ESB1100-005	LEAF SWITCH	1		
14	E75832-001	SPECIAL SCREW	1		
15	EMV5109-006B	PLUG ASSY	1	6PIN	
16	E102357-221	LOADING BASE	1		
17	E65923-003	SCREW	3		
18	SPSK2640Z	SCREW	2		
19	E75984-001	MOTOR PULLEY	1		
20	E75950-002	BELT	1		
21	E72024-001	SPEED NUT	1		
22	E75985-001	GEAR	1		
23	E75986-002	GEAR	1		
24	SBSF3008Z	SCREW	1		
25	E307252-221	CAM - PLATE	1		
26	E75987-001	REEL GEAR	1		
27	E75989-001	SPRING	1		
28	E307162-221	LEVER	1		
29	ESS1200-002	SLIDE SWITCH	1		
30	RF-500TB-12560	MOTOR	1		
31	EMW10255-002(S)	CIRCUIT BOARD	1		
32	EMV5109-005B	PLUG ASSY	1	5PIN	
33	E406871-001	SPRING	2		
34	E406294-002	INSULATOR	4		
35	E307179-221	ELEVATOR BASE ASSY	1		

Printed Circuit Board Ass'y and Parts List

■ENJ-072☐ Power Supply & Deck PC Board Ass'y

Note : ENJ-072 ☐ varies according to the areas employed. See note (1) when placing an order.



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Note (1)

PC Board Ass'y	Designated Areas
ENJ-072 [B]	Taiwan, Universal Type
ENJ-072 [H]	the U.S.A., Canada
ENJ-072 [J]	Australia
ENJ-072 [J]	Scandinavia, East Europe Continental Europe
ENJ-072 [K]BS	the U.K.
ENJ-072 [L]	Germany, Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q201	DTC144ES	SILICON	ROHM	
	Q202	DTC144ES	SILICON	ROHM	
	Q203	2SK373(O,Y)	F.E.T	TOSHIBA	
	Q204	2SK373(O,Y)	F.E.T	TOSHIBA	
	Q221	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q222	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q223	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q224	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q225	DTC114YS	SILICON	ROHM	
	Q226	DTC114YS	SILICON	ROHM	
	Q227	DTC114YS	SILICON	ROHM	
	Q228	DTC114YS	SILICON	ROHM	
	Q271	DTC144ES	SILICON	ROHM	
	Q272	DTA144ES	SILICON	ROHM	
	Q273	DTA144ES	SILICON	ROHM	
	Q274	DTC144ES	SILICON	ROHM	
	Q275	2SD2144S(VW)	SILICON	ROHM	
	Q276	2SD2144S(VW)	SILICON	ROHM	
	Q277	DTC144ES	SILICON	ROHM	
	Q281	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q282	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q305	DTC144TS	SILICON	ROHM	
	Q306	DTC144TS	SILICON	ROHM	
	Q307	DTC144TS	SILICON	ROHM	
	Q308	DTC144TS	SILICON	ROHM	
	Q309	DTC144TS	SILICON	ROHM	
	Q310	DTC144TS	SILICON	ROHM	
	Q311	DTC144TS	SILICON	ROHM	
	Q312	DTC144TS	SILICON	ROHM	
	Q335	2SC945A(P,Q)	SILICON	NEC	
	Q336	2SC945A(P,Q)	SILICON	NEC	
	Q337	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q338	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q339	DTC144ES	SILICON	ROHM	
	Q361	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q362	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q363	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q364	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q365	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q366	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q367	2SD2144S(VW)	SILICON	ROHM	
	Q368	2SD2144S(VW)	SILICON	ROHM	
	Q369	DTC144ES	SILICON	ROHM	
	Q393	2SD2144S(VW)	SILICON	ROHM	
	Q394	2SD2144S(VW)	SILICON	ROHM	
	Q395	DTA144ES	SILICON	ROHM	
	Q536	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q537	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q538	2SA933S(R,S)	SILICON	ROHM	
	Q539	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q551	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q552	2SD2061(F,G)	SILICON	ROHM	
	Q553	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q554	2SD2061(F,G)	SILICON	ROHM	
	Q555	2SB1187(F,G)	SILICON	ROHM	
	Q556	DTC144ES	SILICON	ROHM	
	Q557	DTA144ES	SILICON	ROHM	
	Q558	DTA144ES	SILICON	ROHM	
	Q559	DTC144ES	SILICON	ROHM	
	Q560	2SC1685(Q,R)	SILICON	MATSUSHITA	
	Q561	2SD2061(F,G)	SILICON	ROHM	
	Q562	2SA733A(P,Q)	SILICON	NEC	
	Q563	2SB1187(F,G)	SILICON	ROHM	
	Q571	DTC114YS	SILICON	ROHM	
	Q572	DTC114YS	SILICON	ROHM	
	Q573	2SB1357(E,F)	SILICON	ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC201	BU4066B	I.C.	ROHM	
	IC202	UPC1228HA	I.C.	NEC	
	IC301	BA15218N	I.C.	ROHM	
	IC381	HA12136AT	I.C.	HITACHI	
	IC501	STK4141MK5	I.C.	SANYO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D201	1SS119	SILICON	HITACHI	
	D202	1SS119	SILICON	HITACHI	
	D203	1SS119	SILICON	HITACHI	
	D204	1SS119	SILICON	HITACHI	
	D205	1SS119	SILICON	HITACHI	
	D206	1SS119	SILICON	HITACHI	
	D207	MTZ5.6JC	ZENER	ROHM	
	D208	MTZ5.6JC	ZENER	ROHM	
	D211	1SS119	SILICON	HITACHI	
	D212	1SS119	SILICON	HITACHI	
	D273	1SS119	SILICON	HITACHI	
	D291	1SS119	SILICON	HITACHI	
	D335	1SS119	SILICON	HITACHI	
	D501	1SS119	SILICON	HITACHI	
	D502	1SS119	SILICON	HITACHI	
	D537	1SS119	SILICON	HITACHI	
	D538	MTZ24JC	ZENER	ROHM	
	D539	ERB12-02RKL1	SILICON	KYOUDOU	
	D540	ERB12-02RKL1	SILICON	KYOUDOU	
	D541	ERB12-02RKL1	SILICON	KYOUDOU	
	D542	ERB12-02RKL1	SILICON	KYOUDOU	
	D551	MTZ11JC	ZENER	ROHM	
	D552	MTZ6.8JC	ZENER	ROHM	
	D553	MTZ5.6JC	ZENER	ROHM	
	D554	MTZ13JC	ZENER	ROHM	
	D555	MTZ13JC	ZENER	ROHM	
	D561	1SS119	SILICON	HITACHI	
	D572	1SS119	SILICON	HITACHI	
	D574	MTZ5.1JC	ZENER	ROHM	
	D575	1SS119	SILICON	HITACHI	
	D576	MTZ30JC	ZENER	ROHM	
	D577	1SR139-200	SILICON	ROHM	
	D578	1SR139-200	SILICON	ROHM	
	D579	MTZ5.1JC	ZENER	ROHM	
	D580	1SR139-200	SILICON	ROHM	
	D581	1SR139-200	SILICON	ROHM	
	D582	1SR139-200	SILICON	ROHM	
	D583	1SR139-200	SILICON	ROHM	
	D584	1SR139-200	SILICON	ROHM	
	D585	1SR139-200	SILICON	ROHM	
	D592	1SS119	SILICON	HITACHI	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C202	QCHB1E2-223	0.022MF	25V	CERAMIC	L
	C203	QCHB1EZ-223	0.022MF	25V	CERAMIC	L
	C207	QETB1AM-476	47MF	10V	ELECTRO	
	C208	QETB1AM-476	47MF	10V	ELECTRO	
	C211	QCBB1HK-471	470PF	50V	CERAMIC	
	C212	QCBB1HK-471	470PF	50V	CERAMIC	
	C213	QCXB1CM-122	1200PF	16V	CERAMIC	
	C214	QCXB1CM-122	1200PF	16V	CERAMIC	
	C219	QETB1HM-225	2.2MF	50V	ELECTRO	
	C220	QETB1HM-225	2.2MF	50V	ELECTRO	
	C221	QETB1HM-225	2.2MF	50V	ELECTRO	
	C222	QETB1HM-225	2.2MF	50V	ELECTRO	
	C223	QCBB1HK-101	100PF	50V	CERAMIC	
	C224	QCBB1HK-101	100PF	50V	CERAMIC	
	C225	QEKS1CM-107	100MF	16V	ELECTRO	
	C226	QEKS1CM-107	100MF	16V	ELECTRO	
	C227	QFN81HJ-822	8200PF	50V	MYLAR	
	C228	QFN81HJ-822	8200PF	50V	MYLAR	
	C231	QETB1CM-477	470MF	16V	ELECTRO	
	C233	QCS21HJ-101	100PF	50V	CERAMIC	
	C234	QCS21HJ-101	100PF	50V	CERAMIC	
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	B
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	H
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	I
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	J
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	KBS
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	B
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	H
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	I
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	J
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	KBS
	C253	QCXB1CM-182	1800PF	16V	CERAMIC	
	C254	QCXB1CM-182	1800PF	16V	CERAMIC	
	C281	QEKS1HM-105G	1MF	50V	ELECTRO	
	C282	QFN81HJ-223	0.022MF	50V	MYLAR	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C283	QFN81HJ-223	0.022MF	50V	MYLAR	
	C291	QETB1AM-476	47MF	10V	ELECTRO	
	C301	QFN81HJ-104	0.1MF	50V	MYLAR	
	C302	QFN81HJ-104	0.1MF	50V	MYLAR	
	C305	QETB1HM-225	2.2MF	50V	ELECTRO	
	C306	QETB1HM-225	2.2MF	50V	ELECTRO	
	C307	QETB1HM-225	2.2MF	50V	ELECTRO	
	C308	QETB1HM-225	2.2MF	50V	ELECTRO	
	C311	QETB1EM-226	22MF	25V	ELECTRO	
	C312	QETB1EM-226	22MF	25V	ELECTRO	
	C313	QCSB1HJ-470	47PF	50V	CERAMIC	
	C314	QCSB1HJ-470	47PF	50V	CERAMIC	
	C315	QCY21HK-682	6800PF	50V	CERAMIC	
	C316	QCY21HK-682	6800PF	50V	CERAMIC	
	C317	QCY21HK-562	5600PF	50V	CERAMIC	
	C318	QCY21HK-562	5600PF	50V	CERAMIC	
	C319	QFN81HJ-822	8200PF	50V	MYLAR	
	C320	QFN81HJ-822	8200PF	50V	MYLAR	
	C321	QCY21HK-122	1200PF	50V	CERAMIC	
	C322	QCY21HK-122	1200PF	50V	CERAMIC	
	C323	QCY21HK-682	6800PF	50V	CERAMIC	
	C324	QCY21HK-682	6800PF	50V	CERAMIC	
	C325	QETB1CM-107	100MF	16V	ELECTRO	
	C326	QETB1CM-107	100MF	16V	ELECTRO	
	C335	QCS21HJ-101	100PF	50V	CERAMIC	
	C336	QCS21HJ-101	100PF	50V	CERAMIC	
	C337	QEK51EM-106	10MF	25V	ELECTRO	
	C338	QEK51EM-476	47MF	25V	ELECTRO	
	C339	QEK51HM-105G	1MF	50V	ELECTRO	
	C340	QETB1HM-105	1MF	50V	ELECTRO	
	C341	QCBB1HK-561	560PF	50V	CERAMIC	J
	C341	QCBB1HK-561	560PF	50V	CERAMIC	KBS
	C341	QCBB1HK-561	560PF	50V	CERAMIC	L
	C342	QFP81HJ-822	8200PF	50V	POLY	
	C343	QFN81HJ-123	0.012MF	50V	MYLAR	
	C344	QFN81HJ-222	2200PF	50V	MYLAR	
	C345	QFN81HJ-222	2200PF	50V	MYLAR	
	C346	QFN81HJ-682	6800PF	50V	MYLAR	
	C347	QCS21HJ-101	100PF	50V	CERAMIC	
	C348	QCS21HJ-101	100PF	50V	CERAMIC	
	C351	QETB1HM-106	10MF	50V	ELECTRO	
	C355	QFN81HJ-473	0.047MF	50V	MYLAR	
	C356	QFN81HJ-473	0.047MF	50V	MYLAR	
	C381	QETB1HM-105	1MF	50V	ELECTRO	
	C382	QETB1HM-105	1MF	50V	ELECTRO	
	C383	QETB1HM-475	4.7MF	50V	ELECTRO	
	C384	QETB1HM-475	4.7MF	50V	ELECTRO	
	C385	QETB1HM-105	1MF	50V	ELECTRO	
	C386	QETB1HM-105	1MF	50V	ELECTRO	
	C387	QETB1HM-475	4.7MF	50V	ELECTRO	
	C388	QETB1HM-475	4.7MF	50V	ELECTRO	
	C389	QFV81HJ-224	0.22MF	50V	T.FILM	
	C390	QFV81HJ-224	0.22MF	50V	T.FILM	
	C391	QETB1HM-475	4.7MF	50V	ELECTRO	
	C392	QETB1HM-475	4.7MF	50V	ELECTRO	
	C393	QETB1CM-107	100MF	16V	ELECTRO	
	C394	QETB1HM-475	4.7MF	50V	ELECTRO	
	C397	QETB1EM-226	22MF	25V	ELECTRO	
	C501	EEZ5009-106	10MF		ELECTRO	
	C502	EEZ5009-106	10MF		ELECTRO	
	C503	QCBB1HK-471	470PF	50V	CERAMIC	B
	C503	QCBB1HK-471	470PF	50V	CERAMIC	H
	C503	QCBB1HK-471	470PF	50V	CERAMIC	I
	C503	QCBB1HK-471	470PF	50V	CERAMIC	J
	C503	QCBB1HK-471	470PF	50V	CERAMIC	KBS
	C504	QCBB1HK-471	470PF	50V	CERAMIC	B
	C504	QCBB1HK-471	470PF	50V	CERAMIC	H
	C504	QCBB1HK-471	470PF	50V	CERAMIC	I
	C504	QCBB1HK-471	470PF	50V	CERAMIC	J
	C504	QCBB1HK-471	470PF	50V	CERAMIC	KBS
	C505	QCBB1HK-221	220PF	50V	CERAMIC	
	C506	QCBB1HK-221	220PF	50V	CERAMIC	
	C507	QETB1EM-107	100MF	25V	ELECTRO	
	C508	QETB1EM-107	100MF	25V	ELECTRO	
	C509	QCSB1HJ-100	10PF	50V	CERAMIC	
	C510	QCSB1HJ-100	10PF	50V	CERAMIC	
	C511	QETB1HM-226	22MF	50V	ELECTRO	
	C512	QETB1HM-226	22MF	50V	ELECTRO	
	C513	QETB1HM-476	47MF	50V	ELECTRO	
	C514	QETB1HM-106	10MF	50V	ELECTRO	
	C515	QFN81HJ-104	0.1MF	50V	MYLAR	
	C516	QFN81HJ-104	0.1MF	50V	MYLAR	
	C517	QFN81HJ-104	0.1MF	50V	MYLAR	
	C518	QFN81HJ-104	0.1MF	50V	MYLAR	
	C536	QETB1CM-476	47MF	16V	ELECTRO	
	C537	QETB1EM-226	22MF	25V	ELECTRO	
	C538	EET4202-228E	2200MF		ELECTRO	B
	C538	EET4202-338E	3300MF		ELECTRO	H
	C538	EET4202-228E	2200MF		ELECTRO	I
	C538	EET4202-228E	2200MF		ELECTRO	J
	C538	EET4202-228E	2200MF		ELECTRO	KBS
	C538	EET4202-228E	2200MF		ELECTRO	L
	C539	EET4202-228E	2200MF		ELECTRO	B
	C539	EET4202-338E	3300MF		ELECTRO	H
	C539	EET4202-228E	2200MF		ELECTRO	I

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C539	EET4202-228E	2200MF		ELECTRO	J
	C539	EET4202-228E	2200MF		ELECTRO	KBS
	C539	EET4202-228E	2200MF		ELECTRO	L
	C540	QFN82AJ-103	0.01MF	100V	MYLAR	B
	C540	QFN82AJ-103	0.01MF	100V	MYLAR	H
	C540	QFN82AJ-103	0.01MF	100V	MYLAR	I
	C540	QFN82AJ-103	0.01MF	100V	MYLAR	J
	C540	QFN82AJ-103	0.01MF	100V	MYLAR	KBS
	C540	QFV82AJ-104	0.1MF	100V	T.FILM	L
	C541	QFN82AJ-103	0.01MF	100V	MYLAR	B
	C541	QFN82AJ-103	0.01MF	100V	MYLAR	H
	C541	QFN82AJ-103	0.01MF	100V	MYLAR	I
	C541	QFN82AJ-103	0.01MF	100V	MYLAR	J
	C541	QFN82AJ-103	0.01MF	100V	MYLAR	KBS
	C541	QFV82AJ-104	0.1MF	100V	T.FILM	L
	C542	QFN82AJ-103	0.01MF	100V	MYLAR	B
	C542	QFN82AJ-103	0.01MF	100V	MYLAR	H
	C542	QFN82AJ-103	0.01MF	100V	MYLAR	I
	C542	QFN82AJ-103	0.01MF	100V	MYLAR	J
	C542	QFN82AJ-103	0.01MF	100V	MYLAR	KBS
	C542	QFV82AJ-104	0.1MF	100V	T.FILM	L
	C543	QFN81HJ-103	0.01MF	50V	MYLAR	L
	C544	QFN81HJ-103	0.01MF	50V	MYLAR	L
	C545	QCXB1CM-222	2200PF	16V	CERAMIC	L
	C546	QCXB1CM-222	2200PF	16V	CERAMIC	L
	C547	QCHB1EZ-223	0.022MF	25V	CERAMIC	L
	C548	QCHB1EZ-223	0.022MF	25V	CERAMIC	L
	C550	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C551	QETB1EM-226	22MF	25V	ELECTRO	
	C552	QETB1CM-476	47MF	16V	ELECTRO	
	C553	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C554	QETB1AM-476	47MF	10V	ELECTRO	
	C555	QETB1AM-476	47MF	10V	ELECTRO	
	C556	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C557	QETB1EM-226	22MF	25V	ELECTRO	
	C558	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C559	QETB1CM-476	47MF	16V	ELECTRO	
	C560	QETB1HM-106	10MF	50V	ELECTRO	
	C561	QETB1HM-106	10MF	50V	ELECTRO	
	C562	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C563	QETB1HM-106	10MF	50V	ELECTRO	
	C564	QETB1EM-226	22MF	25V	ELECTRO	
	C565	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C566	QETB1EM-226	22MF	25V	ELECTRO	
	C571	QETB1HM-225	2.2MF	50V	ELECTRO	
	C572	QETB1HM-106	10MF	50V	ELECTRO	
	C573	QCGB1HK-102	1000PF	50V	CERAMIC	
	C574	QETB1HM-226	22MF	50V	ELECTRO	
	C575	QETB1HM-226	22MF	50V	ELECTRO	
	C576	QETB1JM-476	47MF	63V	ELECTRO	
	C577	QETB1JM-107	100MF	63V	ELECTRO	
	C578	QETB1HM-475	4.7MF	50V	ELECTRO	
	C579	QFN82AJ-103	0.01MF	100V	MYLAR	
	C580	QFN82AJ-103	0.01MF	100V	MYLAR	
	C581	QFN82AJ-103	0.01MF	100V	MYLAR	
	C582	EET3501-228T	2200MF		ELECTRO	
	C583	EET3501-228T	2200MF		ELECTRO	
	C591	QETB1HM-106	10MF	50V	ELECTRO	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R201	QRD167J-224	220K	1/6W	CARBON	
	R202	QRD167J-224	220K	1/6W	CARBON	
	R203	QRD167J-512	5.1K	1/6W	CARBON	
	R204	QRD167J-512	5.1K	1/6W	CARBON	
	R205	QRD167J-471	470	1/6W	CARBON	
	R206	QRD167J-471	470	1/6W	CARBON	
	R207	QRD167J-100	10	1/6W	CARBON	
	R208	QRD167J-100	10	1/6W	CARBON	
	R209	QRD167J-105	1M	1/6W	CARBON	
	R210	QRD167J-105	1M	1/6W	CARBON	
	R211	QRD167J-512	5.1K	1/6W	CARBON	
	R212	QRD167J-512	5.1K	1/6W	CARBON	
	R213	QRD167J-475	4.7M	1/6W	CARBON	
	R214	QRD167J-475	4.7M	1/6W	CARBON	
	R225	QRD167J-470	47	1/6W	CARBON	
	R226	QRD167J-470	47	1/6W	CARBON	
	R227	QRD167J-334	330K	1/6W	CARBON	
	R228	QRD167J-334	330K	1/6W	CARBON	
	R229	QRD167J-432	4.3K	1/6W	CARBON	
	R230	QRD167J-432	4.3K	1/6W	CARBON	
	R231	QRD167J-272	2.7K	1/6W	CARBON	
	R232	QRD167J-272	2.7K	1/6W	CARBON	
	R233	QRD167J-272	2.7K	1/6W	CARBON	
	R234	QRD167J-272	2.7K	1/6W	CARBON	
	R235	QRD167J-223	22K	1/6W	CARBON	
	R236	QRD167J-223	22K	1/6W	CARBON	
	R237	QRD167J-752	7.5K	1/6W	CARBON	
	R238	QRD167J-752	7.5K	1/6W	CARBON	
	R239	QRD167J-105	1M	1/6W	CARBON	
	R240	QRD167J-105	1M	1/6W	CARBON	

⚠ : SAFETY PARTS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R241	QRD167J-105	1M	1/6W	CARBON	
	R242	QRD167J-105	1M	1/6W	CARBON	
	R243	QRD167J-471	470	1/6W	CARBON	
	R244	QRD167J-472	4.7K	1/6W	CARBON	
	R245	QRD167J-472	4.7K	1/6W	CARBON	
	R271	QRD167J-103	10K	1/6W	CARBON	
	R272	QRD167J-472	4.7K	1/6W	CARBON	
	R273	QRD167J-472	4.7K	1/6W	CARBON	
	R277	QRD167J-103	10K	1/6W	CARBON	
	R278	QRD167J-103	10K	1/6W	CARBON	
	R281	QRD167J-104	100K	1/6W	CARBON	
	R282	QRD167J-105	1M	1/6W	CARBON	
	R283	QRD167J-103	10K	1/6W	CARBON	
	R284	QRD167J-105	1M	1/6W	CARBON	
	R285	QRD167J-683	68K	1/6W	CARBON	
	R286	QRD167J-104	100K	1/6W	CARBON	
	R287	QRD167J-104	100K	1/6W	CARBON	
	R291	QRD167J-104	100K	1/6W	CARBON	
	R292	QRD167J-274	270K	1/6W	CARBON	
	R293	QRD167J-562	5.6K	1/6W	CARBON	
	R301	QRD167J-223	22K	1/6W	CARBON	
	R302	QRD167J-223	22K	1/6W	CARBON	
	R305	QRD167J-683	68K	1/6W	CARBON	
	R306	QRD167J-683	68K	1/6W	CARBON	
	R307	QRD167J-153	15K	1/6W	CARBON	
	R308	QRD167J-153	15K	1/6W	CARBON	
	R309	QRD167J-223	22K	1/6W	CARBON	
	R310	QRD167J-223	22K	1/6W	CARBON	
	R313	QRD167J-242	2.4K	1/6W	CARBON	
	R314	QRD167J-242	2.4K	1/6W	CARBON	
	R315	QRD167J-101	100	1/6W	CARBON	
	R316	QRD167J-101	100	1/6W	CARBON	
	R317	QRD167J-391	390	1/6W	CARBON	
	R318	QRD167J-391	390	1/6W	CARBON	
	R319	QRD167J-152	1.5K	1/6W	CARBON	
	R320	QRD167J-152	1.5K	1/6W	CARBON	
	R321	QRD167J-432	4.3K	1/6W	CARBON	
	R322	QRD167J-432	4.3K	1/6W	CARBON	
	R323	QRD167J-152	1.5K	1/6W	CARBON	
	R324	QRD167J-152	1.5K	1/6W	CARBON	
	R325	QRD167J-104	100K	1/6W	CARBON	
	R326	QRD167J-104	100K	1/6W	CARBON	
	R327	QRD167J-152	1.5K	1/6W	CARBON	
	R328	QRD167J-152	1.5K	1/6W	CARBON	
	R329	QRD167J-392	3.9K	1/6W	CARBON	
	R330	QRD167J-392	3.9K	1/6W	CARBON	
	R331	QRD161J-221	220	1/6W	CARBON	
	R332	QRD161J-221	220	1/6W	CARBON	
	R337	QRD167J-473	47K	1/6W	CARBON	
	R338	QRD167J-473	47K	1/6W	CARBON	
△	R339	QRD14CJ-5R6S	5.6	1/4W	UNF.CARBON	
	R340	QRD167J-472	4.7K	1/6W	CARBON	
	R341	QRD167J-104	100K	1/6W	CARBON	
	R342	QRD167J-332	3.3K	1/6W	CARBON	
	R343	QRD167J-181	180	1/6W	CARBON	
	R344	QRD167J-201	200	1/6W	CARBON	
△	R345	QRZ0077-100	10	1/4W	FUSIBLE	B
△	R345	QRD14CJ-100S	10	1/4W	UNF.CARBON	H
△	R345	QRZ0077-100	10	1/4W	FUSIBLE	I
△	R345	QRZ0077-100	10	1/4W	FUSIBLE	J
△	R345	QRZ0077-100	10	1/4W	FUSIBLE	KBS
△	R345	QRZ0077-100	10	1/4W	FUSIBLE	L
	R346	QRD167J-103	10K	1/6W	CARBON	
	R350	QRD167J-105	1M	1/6W	CARBON	
	R351	QRD167J-243	24K	1/6W	CARBON	
	R352	QRD167J-243	24K	1/6W	CARBON	
	R353	QRD167J-302	3K	1/6W	CARBON	
	R354	QRD167J-302	3K	1/6W	CARBON	
	R355	QRD167J-561	560	1/6W	CARBON	
	R356	QRD167J-561	560	1/6W	CARBON	
	R357	QRD167J-223	22K	1/6W	CARBON	
	R358	QRD167J-223	22K	1/6W	CARBON	
	R359	QRD167J-332	3.3K	1/6W	CARBON	
	R360	QRD167J-332	3.3K	1/6W	CARBON	
	R361	QRD167J-473	47K	1/6W	CARBON	
	R362	QRD167J-473	47K	1/6W	CARBON	
	R363	QRD167J-223	22K	1/6W	CARBON	
	R364	QRD167J-223	22K	1/6W	CARBON	
	R365	QRD167J-472	4.7K	1/6W	CARBON	
	R366	QRD167J-472	4.7K	1/6W	CARBON	
	R371	QRD167J-103	10K	1/6W	CARBON	
	R372	QRD167J-103	10K	1/6W	CARBON	
	R373	QRD167J-684	680K	1/6W	CARBON	
	R374	QRD167J-684	680K	1/6W	CARBON	
	R381	QRD167J-153	15K	1/6W	CARBON	
	R382	QRD167J-153	15K	1/6W	CARBON	
	R383	QRD167J-822	8.2K	1/6W	CARBON	
	R384	QRD167J-822	8.2K	1/6W	CARBON	
△	R385	QRZ0077-220	22	1/4W	FUSIBLE	B
△	R385	QRD14CJ-220S	22	1/4W	UNF.CARBON	H
△	R385	QRZ0077-220	22	1/4W	FUSIBLE	I
△	R385	QRZ0077-220	22	1/4W	FUSIBLE	J
△	R385	QRZ0077-220	22	1/4W	FUSIBLE	KBS
△	R385	QRZ0077-220	22	1/4W	FUSIBLE	L
	R386	QRD167J-183	18K	1/6W	CARBON	

△ : SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R387	QRD167J-103	10K	1/6W	CARBON	
	R388	QRD167J-103	10K	1/6W	CARBON	
	R389	QRD167J-562	5.6K	1/6W	CARBON	
	R390	QRD167J-562	5.6K	1/6W	CARBON	
	R391	QRD167J-822	8.2K	1/6W	CARBON	
	R392	QRD167J-822	8.2K	1/6W	CARBON	
	R393	QRD167J-272	2.7K	1/6W	CARBON	
	R394	QRD167J-272	2.7K	1/6W	CARBON	
	R395	QRD167J-103	10K	1/6W	CARBON	
	R396	QRD167J-103	10K	1/6W	CARBON	
	R397	QRD167J-102	1K	1/6W	CARBON	
	R501	QRD167J-102	1K	1/6W	CARBON	
	R502	QRD167J-102	1K	1/6W	CARBON	
	R503	QRD167J-104	100K	1/6W	CARBON	
	R504	QRD167J-104	100K	1/6W	CARBON	
	R505	ERD141J-681S	680	1/4W	CARBON	
	R506	ERD141J-681S	680	1/4W	CARBON	
	R507	QRD167J-471	470	1/6W	CARBON	
	R508	QRD167J-471	470	1/6W	CARBON	
	R509	QRD167J-104	100K	1/6W	CARBON	
	R510	QRD167J-104	100K	1/6W	CARBON	
	R511	QRD167J-242	2.4K	1/6W	CARBON	
	R512	QRD167J-242	2.4K	1/6W	CARBON	
	R513	QRD167J-242	2.4K	1/6W	CARBON	
	R514	QRD167J-242	2.4K	1/6W	CARBON	
△	R515	QRX012J-R22AM	0.22	1W	M.FILM	
△	R516	QRX012J-R22AM	0.22	1W	M.FILM	
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	B
△	R517	QRD14CJ-101S	100	1/4W	UNF.CARBON	H
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	I
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	J
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	KBS
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	L
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	B
△	R518	QRD14CJ-100S	10	1/4W	UNF.CARBON	H
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	I
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	J
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	KBS
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	L
△	R519	QRD14CJ-100S	10	1/4W	UNF.CARBON	
△	R520	QRD14CJ-100S	10	1/4W	UNF.CARBON	
△	R521	QRD14CJ-100S	10	1/4W	UNF.CARBON	
△	R522	QRD14CJ-100S	10	1/4W	UNF.CARBON	
	R527	QRD167J-104	100K	1/6W	CARBON	
	R528	QRD167J-104	100K	1/6W	CARBON	
	R529	QRD167J-103	10K	1/6W	CARBON	
	R530	QRD167J-154	150K	1/6W	CARBON	
	R531	QRD167J-473	47K	1/6W	CARBON	
△	R532	QRZ0077-100	10	1/4W	FUSIBLE	
△	R533	QRD14CJ-222S	2.2K	1/4W	UNF.CARBON	
△	R534	QRD14CJ-222S	2.2K	1/4W	UNF.CARBON	
	R536	QRD167J-472	4.7K	1/6W	CARBON	
	R537	QRD167J-104	100K	1/6W	CARBON	
	R538	QRD167J-104	100K	1/6W	CARBON	
	R539	QRD167J-103	10K	1/6W	CARBON	
	R540	QRD167J-104	100K	1/6W	CARBON	
	R541	QRD167J-103	10K	1/6W	CARBON	
	R542	QRD167J-222	2.2K	1/6W	CARBON	
	R543	QRD167J-823	82K	1/6W	CARBON	
	R544	QRD167J-104	100K	1/6W	CARBON	
△	R545	QRGD22J-391AM	390	2W	O.M.FILM	
	R546	QRD167J-152	1.5K	1/6W	CARBON	
△	R547	QRD14CJ-100S	10	1/4W	UNF.CARBON	L
△	R548	QRD14CJ-100S	10	1/4W	UNF.CARBON	L
	R551	QRD167J-332	3.3K	1/6W	CARBON	
	R552	QRD167J-392	3.9K	1/6W	CARBON	
	R553	QRD167J-472	4.7K	1/6W	CARBON	
	R554	QRD167J-472	4.7K	1/6W	CARBON	
	R555	QRD167J-472	4.7K	1/6W	CARBON	
	R556	QRD167J-153	15K	1/6W	CARBON	
	R557	QRD167J-103	10K	1/6W	CARBON	
	R558	QRD167J-332	3.3K	1/6W	CARBON	
	R559	QRD167J-222	2.2K	1/6W	CARBON	
△	R561	QRZ0077-8R2	8.2	1/4W	FUSIBLE	B
△	R561	QRD14CJ-8R2S	8.2	1/4W	UNF.CARBON	H
△	R561	QRZ0077-8R2	8.2	1/4W	FUSIBLE	I
△	R561	QRZ0077-8R2	8.2	1/4W	FUSIBLE	J
△	R561	QRZ0077-8R2	8.2	1/4W	FUSIBLE	KBS
△	R561	QRZ0077-8R2	8.2	1/4W	FUSIBLE	L
△	R562	QRZ0077-8R2	8.2	1/4W	FUSIBLE	B
△	R562	QRD14CJ-8R2S	8.2	1/4W	UNF.CARBON	H
△	R562	QRZ0077-8R2	8.2	1/4W	FUSIBLE	I
△	R562	QRZ0077-8R2	8.2	1/4W	FUSIBLE	J
△	R562	QRZ0077-8R2	8.2	1/4W	FUSIBLE	KBS
△	R562	QRZ0077-8R2	8.2	1/4W	FUSIBLE	L
	R572	QRD167J-103	10K	1/6W	CARBON	
	R573	QRD167J-102	1K	1/6W	CARBON	
	R574	QRD167J-103	10K	1/6W	CARBON	
	R575	QRD167J-103	10K	1/6W	CARBON	
	R576	QRD167J-562	5.6K	1/6W	CARBON	
△	R577	PTH61G25AR47M			FUSIBLE RESI	
△	R581	QRX022J-2R2AM	2.2	2W	M.FILM	
△	R582	QRX022J-2R2AM	2.2	2W	M.FILM	
△	R591	QRD14CJ-222S	2.2K	1/4W	UNF.CARBON	
△	R592	QRZ0077-100	10	1/4W	FUSIBLE	

△ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
⚠	R598	QRZ0077-100	10 1/4W FUSIBLE	B
⚠	R598	QRD14CJ-100S	10 1/4W UNF.CARBON	H
⚠	R598	QRZ0077-100	10 1/4W FUSIBLE	I
⚠	R598	QRZ0077-100	10 1/4W FUSIBLE	J
⚠	R598	QRZ0077-100	10 1/4W FUSIBLE	KBS
⚠	R598	QRZ0077-100	10 1/4W FUSIBLE	L
⚠	R599	QRC128K-275EM	2.7M 1/2W COMPOSI	H
	VR203	QVPA601-104A	100K VARIABLE	
	VR204	QVPA601-104A	100K VARIABLE	
	VR205	QVPA601-104A	100K VARIABLE	
	VR206	QVPA601-104A	100K VARIABLE	
	VR221	QVPA601-201A	200 VARIABLE	
	VR222	QVPA601-201A	200 VARIABLE	
	VR223	QVPA601-201A	200 VARIABLE	
	VR224	QVPA601-201A	200 VARIABLE	
	VR335	QVPA601-204A	200K VARIABLE	
	VR336	QVPA601-204A	200K VARIABLE	
	VR367	QVPA601-503A	50K VARIABLE	
	VR368	QVPA601-503A	50K VARIABLE	

⚠ : SAFETY PARTS

Others

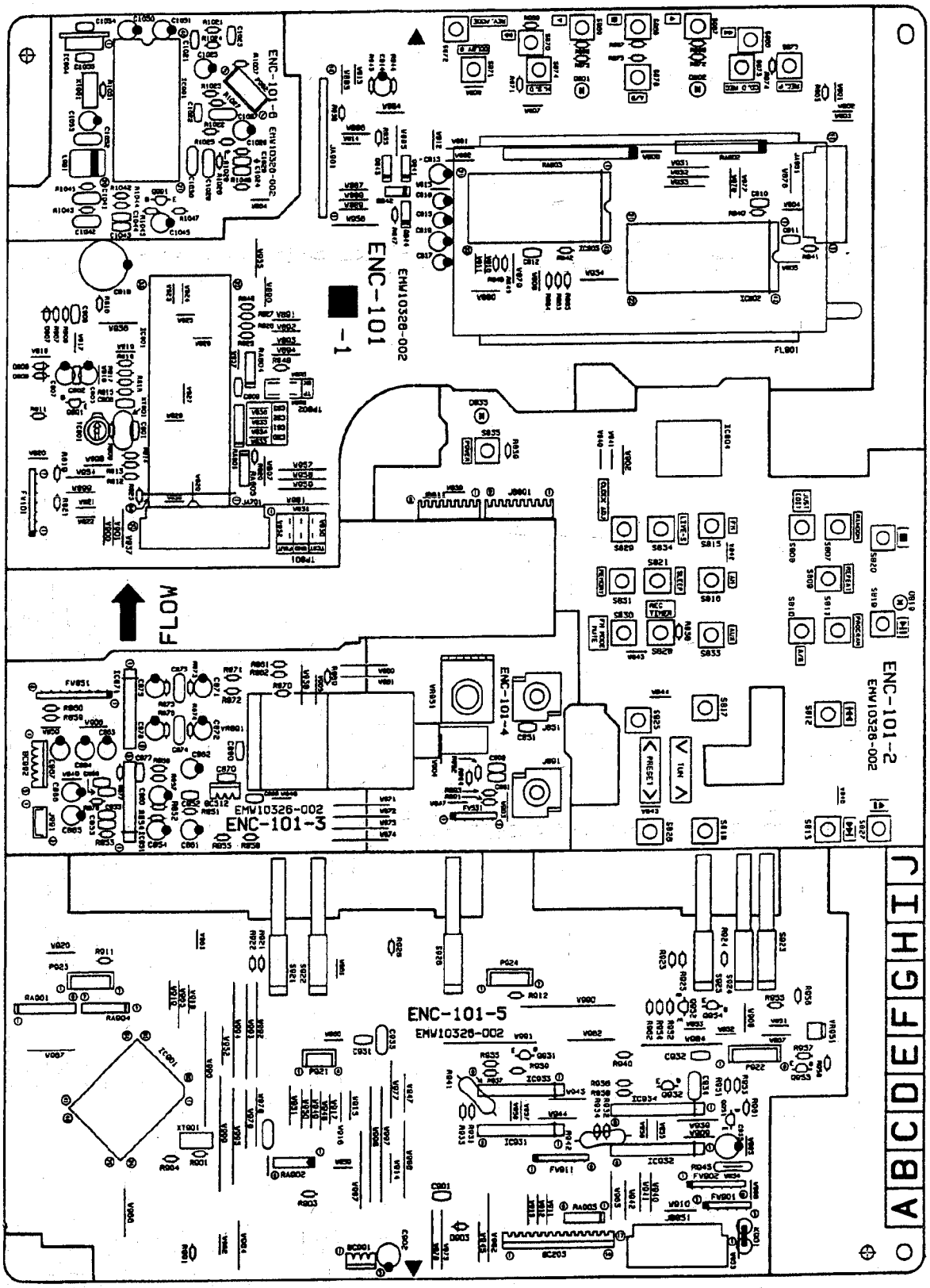
⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E67132-T2R0	FUSE LABEL	B
	J204	EMV7125-006R	CONNECTOR(6PIN) BATTERY	
	J511	EMV7125-008R	CONNECTOR(8PIN) AMPLIFIER	
	J512	EMV5109-003B	PLUG ASSY(3PIN) SIGNAL PATH	
	J521	EMV7125-011R	CONNECTOR(11PIN) REGULATOR	
	J531	EMV7122-005	CONNECTOR(5PIN) TO HEADPHONE	
	J541	EMB90TV-402A	SPEAKER TERMINAL	
	J901	EMV7122-005	CONNECTOR(5PIN) B.-30V	
	L221	EQL2106-223	INDUCTOR	
	L222	EQL2106-223	INDUCTOR	
	L223	EQL4004-101	INDUCTOR	L
	L224	EQL4004-101	INDUCTOR	L
	L301	EQL2126-562	INDUCTOR	
	L302	EQL2126-562	INDUCTOR	
	L335	ENZ6002-010	OSCILLATOR COIL	
	L347	EQL2106-223	INDUCTOR	
	L348	EQL2106-223	INDUCTOR	
	L501	EQL0001-R45	INDUCTOR	
	L502	EQL0001-R45	INDUCTOR	
	P201	TTL25V-003	CONNECTOR(3PIN) A HEAD WIRE	
	P202	TTL25V-007	CONNECTOR(7PIN) B HEAD WIRE	
	P203	EMV5109-014A	PLUG ASSY(14PIN) DECK CONTROL	
	P204	EMV5125-006	PLUG ASSY(6PIN) ENJ-072-1	
	P511	EMV5125-008	PLUG ASSY(8PIN) TO AMPLIFIER	
	P521	EMV5125-011	PLUG ASSY(11PIN) TO REGULATOR	
⚠	S001	QSR0085-018	VOLTAGE SELECTOR	B
	S335	QSS7A12-E01	SLIDE SWITCH(BEET CUT)	J
	S335	QSS7A12-E01	SLIDE SWITCH(BEET CUT)	KBS
	S335	QSS7A12-E01	SLIDE SWITCH(BEET CUT)	L
	EP201	E70225-002	EARTH PLATE	
	FT001	VMZ0087-001	FUSE CLIP	
	FT002	VMZ0087-001	FUSE CLIP	
	FT003	VMZ0087-001	FUSE CLIP	
	FT004	VMZ0087-001	FUSE CLIP	
	FT005	VMZ0087-001	FUSE CLIP	
	FT006	VMZ0087-001	FUSE CLIP	
	FT007	VMZ0087-001	FUSE CLIP	B
	FT008	VMZ0087-001	FUSE CLIP	B
	FW205	EWR358-13LST	FLAT WIRE(5PIN) PLAY/REC PATH	
	FW501	EWR39E-13LST	FLAT WIRE(9PIN) TRANS. SECONDARY	
	FW601	EWR36E-30LST	FLAT WIRE(6PIN) TO CD PCB	
	JT501	EMV7122-005	CONNECTOR(5PIN) TO SECONDARY	
	JT502	EMV7122-004	CONNECTOR(4PIN) TO SECONDARY	
	JT902	EMV7122-103	CONNECTOR(3PIN) PATH OF J902	
	JT903	EMV7122-103	CONNECTOR(3PIN) PATH OF J902	
	RY501	ESK8024-212	RELAY	
	TB001	EMZ4001-001	TAB	
	TB002	EMZ4001-001	TAB	
	TW599	EWT011-075	TERMINAL WIRE	H

⚠ : SAFETY PARTS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

■ENC-101☐ Front & Deck Controller PC Board Ass'y

Note : ENC-101 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENC101 [A]	Scandinavia Continental Europe
ENC-101 [B]	the U.K.
ENC-101 [C]	the U.S.A., Canada
ENC-101 [D]	Taiwan, Universal Type
ENC-101 [E]	East Europe
ENC-101 [F]	Australia
ENC-101 [G]	Italy
ENC-101 [H]	Germany

Transistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	Q801	DTC114YS	SILICON	ROHM		
	Q841	DTC144EFF	SILICON	ROHM		
	Q842	DTC144EFF	SILICON	ROHM		
	Q843	DTC144EFF	SILICON	ROHM		
	Q844	DTA114YFF	SILICON	ROHM		
	Q931	DTC144ES	SILICON	ROHM		
	Q932	DTC144ES	SILICON	ROHM		
	Q951	2SC1685(R,S)	SILICON	MATSUSHITA		
	Q952	2SC1685(R,S)	SILICON	MATSUSHITA		
	Q953	2SA933S(R,S)	SILICON	ROHM		
	Q954	2SA933S(R,S)	SILICON	ROHM		
	Q991	2SC1740S(R,S)	SILICON	ROHM		D

△ : SAFETY PARTS

I.C.s

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC801	HD404019RC18S	I.C.		
	IC802	MSC7112-01SS	I.C.	NIHON DENSO	
	IC803	XR1095CP	I.C.	EXAR JAPAN	
	IC804	SPS-420-1	I.C.	SANYO	
	IC851	BA15218N	I.C.	ROHM	D
	IC871	BA15218N	I.C.	ROHM	
	IC901	HD404719A30FS	I.C.	HITACHI	
	IC931	TA8409S	I.C.	TOSHIBA	
	IC932	TA8409S	I.C.	TOSHIBA	
	IC933	TA8409S	I.C.	TOSHIBA	
	IC934	TA8409S	I.C.	TOSHIBA	
	IC991	M50197P	I.C.	MITSUBISHI	D
	IC994	NJM78M05FD	I.C.	DAINICHI	D

△ : SAFETY PARTS

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	D801	SLR-342DCA47	L.E.D.	0050	
	D802	SLR-342DCA47	L.E.D.	0050	
	D807	1SS119	SILICON	HITACHI	
	D808	1SS119	SILICON	HITACHI	
	D809	1SS119	SILICON	HITACHI	
	D819	SLR-342MCA47	L.E.D.	ROHM	
	D835	SLR-342VC3F	L.E.D.	ROHM	A
	D835	SLA-380LT	L.E.D.	ROHM	B
	D835	SLR-342VC3F	L.E.D.	ROHM	C
	D835	SLR-342VC3F	L.E.D.	ROHM	D
	D835	SLR-342VC3F	L.E.D.	ROHM	E
	D835	SLR-342VC3F	L.E.D.	ROHM	F
	D835	SLR-342VC3F	L.E.D.	ROHM	G
	D835	SLR-342VC3F	L.E.D.	ROHM	H
	D903	1SS119	SILICON	HITACHI	

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C801	QCT30CH-120	12PF	50V	CERAMIC	
	C802	QCV81CM-103	0.01MF	16V	CERAMIC	
	C803	QEK51CM-107	100MF	16V	ELECTRO	
	C806	QCV81CM-103	0.01MF	16V	CERAMIC	
	C807	QEK51EM-475G	4.7MF	25V	ELECTRO	
	C808	QCV81CM-103	0.01MF	16V	CERAMIC	
	C809	QCV81CM-103	0.01MF	16V	CERAMIC	
	C810	QCB81HK-151	150PF	50V	CERAMIC	
	C811	QCB81HK-471	470PF	50V	CERAMIC	
	C812	QCX81CM-152	1500PF	16V	CERAMIC	

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C813	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C814	QEK51HM-225G	2.2MF	50V	ELECTRO	
	C815	QEK51CM-106G	10MF	16V	ELECTRO	
	C816	QEK51CM-106G	10MF	16V	ELECTRO	
	C817	QER50JM-107	100MF	6.3V	ELECTRO	
	C818	QEA40HZ-10AB			ELECTRO	
	C819	QEK51HM-226	22MF	50V	ELECTRO	
	C820	QETB1HM-226	22MF	50V	ELECTRO	
	C851	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C852	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C853	QCBB1HK-101	100PF	50V	CERAMIC	D
	C854	QETB1HM-106	10MF	50V	ELECTRO	D
	C855	QCBB1HK-101	100PF	50V	CERAMIC	D
	C856	QCBB1HK-101	100PF	50V	CERAMIC	D
	C860	QETB1HM-106	10MF	50V	ELECTRO	D
	C861	QETB1HM-106	10MF	50V	ELECTRO	D
	C862	QETB1HM-106	10MF	50V	ELECTRO	D
	C863	QETB1HM-106	10MF	50V	ELECTRO	
	C864	QETB1HM-106	10MF	50V	ELECTRO	
	C865	QETB1HM-106	10MF	50V	ELECTRO	D
	C866	QETB1HM-106	10MF	50V	ELECTRO	D
	C867	QETB1HM-106	10MF	50V	ELECTRO	D
	C869	QCBB1HK-471	470PF	50V	CERAMIC	G
	C869	QCB81HK-471	470PF	50V	CERAMIC	H
	C870	QCBB1HK-471	470PF	50V	CERAMIC	G
	C870	QCBB1HK-471	470PF	50V	CERAMIC	H
	C871	QETB1AM-476	47MF	10V	ELECTRO	
	C872	QETB1AM-476	47MF	10V	ELECTRO	
	C873	QFN81HJ-224	0.22MF	50V	MYLAR	
	C874	QFN81HJ-224	0.22MF	50V	MYLAR	
	C875	QEK51HM-474G	0.47MF	50V	ELECTRO	
	C876	QEK51HM-474G	0.47MF	50V	ELECTRO	
	C877	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C880	QCV81CM-103	0.01MF	16V	CERAMIC	
	C891	QCBB1HK-471	470PF	50V	CERAMIC	G
	C891	QCBB1HK-471	470PF	50V	CERAMIC	H
	C892	QCB81HK-471	470PF	50V	CERAMIC	G
	C892	QCB81HK-471	470PF	50V	CERAMIC	H
	C901	QCV81CM-103	0.01MF	16V	CERAMIC	
	C902	QETB1AM-107	100MF	10V	ELECTRO	
	C931	QCHB1E2-223	0.022MF	25V	CERAMIC	
	C932	QCHB1E2-223	0.022MF	25V	CERAMIC	
	C933	QFV81HJ-104	0.1MF	50V	T.FILM	
	C934	QFV81HJ-104	0.1MF	50V	T.FILM	
	C935	QETB1CM-107	100MF	16V	ELECTRO	
	C1021	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C1022	QCGB1HK-102	1000PF	50V	CERAMIC	D
	C1023	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1024	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1025	QETB1HM-105	1MF	50V	ELECTRO	D
	C1026	QETB1HM-105	1MF	50V	ELECTRO	D
	C1027	QFN81HJ-223	0.022MF	50V	MYLAR	D
	C1028	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1029	QFN81HJ-473	0.047MF	50V	MYLAR	D
	C1030	QFN81HJ-473	0.047MF	50V	MYLAR	D
	C1041	QFV81HJ-334	0.33MF	50V	T.FILM	D
	C1042	QFV81HJ-334	0.33MF	50V	T.FILM	D
	C1043	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1044	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1045	QETB1HM-475	4.7MF	50V	ELECTRO	D
	C1050	QETB1AM-107	100MF	10V	ELECTRO	D
	C1051	QETB1AM-476	47MF	10V	ELECTRO	D
	C1052	QCZ0202-155	1.5MF	25V	CERAMIC	D
	C1053	QETB1AM-107	100MF	10V	ELECTRO	D
	C1054	QCV81CM-103	0.01MF	16V	CERAMIC	D
	C1055	QCV81CM-103	0.01MF	16V	CERAMIC	D

△ : SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R803	QRD167J-331	330	1/6W	CARBON	
	R807	QRD167J-104	100K	1/6W	CARBON	
	R808	QRD167J-223	22K	1/6W	CARBON	
	R809	QRD167J-473	47K	1/6W	CARBON	
	R810	QRD167J-470	47	1/6W	CARBON	
	R811	QRD167J-102	1K	1/6W	CARBON	
	R814	QRD167J-103	10K	1/6W	CARBON	
	R815	QRD167J-103	10K	1/6W	CARBON	
	R816	QRD167J-103	10K	1/6W	CARBON	
	R817	QRD167J-103	10K	1/6W	CARBON	
	R818	QRD167J-103	10K	1/6W	CARBON	
	R819	QRD167J-222	2.2K	1/6W	CARBON	
	R820	QRD167J-222	2.2K	1/6W	CARBON	
	R821	QRD167J-222	2.2K	1/6W	CARBON	
	R823	QRD167J-103	10K	1/6W	CARBON	
	R835	QRD167J-151	150	1/6W	CARBON	A
	R835	QRD167J-471	470	1/6W	CARBON	B
	R835	QRD167J-151	150	1/6W	CARBON	C
	R835	QRD167J-151	150	1/6W	CARBON	D
	R835	QRD167J-151	150	1/6W	CARBON	E

△ : SAFETY PARTS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R835	QRD167J-151	150	1/6W	CARBON	F
	R835	QRD167J-151	150	1/6W	CARBON	G
	R835	QRD167J-151	150	1/6W	CARBON	H
	R836	QRD161J-221	220	1/6W	CARBON	
	R838	QRD167J-681	680	1/6W	CARBON	
	R839	QRD167J-431	430	1/6W	CARBON	
	R840	QRD167J-563	56K	1/6W	CARBON	
	R841	QRD167J-222	2.2K	1/6W	CARBON	
	R842	QRD167J-102	1K	1/6W	CARBON	
	R843	QRD167J-105	1M	1/6W	CARBON	
	R844	QRD167J-105	1M	1/6W	CARBON	
	R845	QRD167J-683	68K	1/6W	CARBON	
	R846	QRD167J-222	2.2K	1/6W	CARBON	
	R847	QRD167J-472	4.7K	1/6W	CARBON	
	R848	QRD167J-103	10K	1/6W	CARBON	
	R849	QRD167J-222	2.2K	1/6W	CARBON	
	R851	QRD167J-102	1K	1/6W	CARBON	D
	R852	QRD167J-103	10K	1/6W	CARBON	D
	R853	QRD167J-104	100K	1/6W	CARBON	D
	R854	QRD167J-911	910	1/6W	CARBON	D
	R855	QRD167J-472	4.7K	1/6W	CARBON	D
	R856	QRD167J-471	470	1/6W	CARBON	D
	R857	QRD167J-104	100K	1/6W	CARBON	D
	R858	QRD167J-472	4.7K	1/6W	CARBON	D
	R859	QRD167J-332	3.3K	1/6W	CARBON	D
	R860	QRD167J-332	3.3K	1/6W	CARBON	D
	R861	QRD167J-103	10K	1/6W	CARBON	
	R862	QRD167J-103	10K	1/6W	CARBON	
	R863	QRD167J-102	1K	1/6W	CARBON	
	R864	QRD167J-102	1K	1/6W	CARBON	
	R865	QRD167J-102	1K	1/6W	CARBON	
	R869	QRD167J-203	20K	1/6W	CARBON	
	R870	QRD167J-203	20K	1/6W	CARBON	
	R871	QRD167J-682	6.8K	1/6W	CARBON	
	R872	QRD167J-682	6.8K	1/6W	CARBON	
	R873	QRD167J-684	680K	1/6W	CARBON	
	R874	QRD167J-684	680K	1/6W	CARBON	
	R875	QRD167J-151	150	1/6W	CARBON	
	R876	QRD167J-151	150	1/6W	CARBON	
	R877	QRD167J-104	100K	1/6W	CARBON	D
	R878	QRD167J-104	100K	1/6W	CARBON	D
	R891	QRD167J-681	680	1/6W	CARBON	
	R892	QRD167J-681	680	1/6W	CARBON	
	R893	QRD167J-681	680	1/6W	CARBON	
	R894	QRD167J-681	680	1/6W	CARBON	
	R901	QRD167J-105	1M	1/6W	CARBON	
	R903	QRD167J-103	10K	1/6W	CARBON	
	R904	QRD167J-471	470	1/6W	CARBON	
	R921	QRD167J-103	10K	1/6W	CARBON	
	R922	QRD167J-332	3.3K	1/6W	CARBON	
	R923	QRD167J-242	2.4K	1/6W	CARBON	
	R924	QRD167J-562	5.6K	1/6W	CARBON	
	R925	QRD167J-153	15K	1/6W	CARBON	
	R926	QRD167J-392	3.9K	1/6W	CARBON	
	R931	QRD167J-153	15K	1/6W	CARBON	
	R932	QRD167J-153	15K	1/6W	CARBON	
	R933	QRD167J-133	13K	1/6W	CARBON	
	R934	QRD167J-133	13K	1/6W	CARBON	
	R935	QRD167J-563	56K	1/6W	CARBON	
	R936	QRD167J-563	56K	1/6W	CARBON	
	R937	QRD167J-123	12K	1/6W	CARBON	
	R938	QRD167J-123	12K	1/6W	CARBON	
	R939	QRD167J-682	6.8K	1/6W	CARBON	
	R940	QRD167J-682	6.8K	1/6W	CARBON	
△	R941	QRG022J-150AM	15	2W	O.M.FILM	
△	R942	QRG022J-150AM	15	2W	O.M.FILM	
△	R945	QRD14CJ-1R0S	1	1/4W	UNF.CARBON	C
	R951	QRD167J-184	180K	1/6W	CARBON	
	R952	QRD167J-224	220K	1/6W	CARBON	
	R953	QRD167J-224	220K	1/6W	CARBON	
	R954	QRD167J-224	220K	1/6W	CARBON	
	R955	QRD167J-683	68K	1/6W	CARBON	
	R956	QRD167J-153	15K	1/6W	CARBON	
	R957	QRD167J-273	27K	1/6W	CARBON	
	R958	QRD167J-242	2.4K	1/6W	CARBON	
	R961	QRD167J-103	10K	1/6W	CARBON	
	R962	QRD167J-103	10K	1/6W	CARBON	
	R966	QRD167J-431	430	1/6W	CARBON	
	R967	QRD167J-681	680	1/6W	CARBON	
	R968	QRD167J-112	1.1K	1/6W	CARBON	
	R969	QRD167J-222	2.2K	1/6W	CARBON	
	R971	QRD167J-431	430	1/6W	CARBON	
	R972	QRD167J-681	680	1/6W	CARBON	
	R973	QRD167J-112	1.1K	1/6W	CARBON	
	R974	QRD167J-222	2.2K	1/6W	CARBON	
	R975	QRD167J-682	6.8K	1/6W	CARBON	
	R991	QRD161J-221	220	1/6W	CARBON	
	RA802	QRB085J-104	100K	1/8W	R.NETWORK	
	RA803	QRB135J-104	100K	1/8W	R.NETWORK	
	RA902	QRB059J-222	2.2K	1/10W	R.NETWORK	
	RA904	QRB069J-103	10K	1/10W	R.NETWORK	
	R1007	QRD167J-434	430K	1/6W	CARBON	D
	R1021	QRD167J-103	10K	1/6W	CARBON	D
	R1022	QRD167J-103	10K	1/6W	CARBON	D
	R1023	QRD167J-302	3K	1/6W	CARBON	D

△ : SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R1024	QRD167J-153	15K	1/6W	CARBON	D
	R1025	QRD167J-153	15K	1/6W	CARBON	D
	R1026	QRD167J-153	15K	1/6W	CARBON	D
	R1027	QRD167J-203	20K	1/6W	CARBON	D
	R1028	QRD167J-272	2.7K	1/6W	CARBON	D
	R1041	QRD167J-752	7.5K	1/6W	CARBON	D
	R1042	QRD167J-752	7.5K	1/6W	CARBON	D
	R1043	QRD167J-753	75K	1/6W	CARBON	D
	R1044	QRD167J-753	75K	1/6W	CARBON	D
	R1045	QRD167J-475	4.7M	1/6W	CARBON	D
	R1046	QRD167J-331	330	1/6W	CARBON	D
	R1047	QRD167J-273	27K	1/6W	CARBON	D
	R1051	QRD167J-105	1M	1/6W	CARBON	D
	VR851	QVJB84B-E54C	50K		VARIABLE	D
	VR891	QVDB94B-E15C	100K		VARIABLE	
	VR951	QVPG401-103	10K		VARIABLE	

△ : SAFETY PARTS

Others

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	J851	QMS3R30-E40S	MINI JACK(MIC JACK)	D
	J891	QMS3R30-E40S	MINI JACK(HEADPHONE)	
	J991	EMV5142-903	PLUG ASSY(3PIN) VOL INDICATOR	
	K901	ENZ8101-007	INDUCTOR	G
	K901	ENZ8101-007	INDUCTOR	H
	L991	EQL3001-101K	INDUCTOR	D
	P921	VMC0234-P04	CONNECT TERMINAL(4PIN) DECK A	
	P922	VMC0234-P08	CONNECT TERMINAL(8PIN) DECK B	
	P923	VMC0234-P07	CONNECT TERMINAL(7PIN) CAM A	
	P924	VMC0234-P07	CONNECT TERMINAL(7PIN) CAM B	
	P992	EMV5109-005A	PLUG ASSY(5PIN) TO DIGITAL ECHO	D
	S807	ESP0001-023M	TACT SWITCH(RANDOM)	
	S808	ESP0001-023M	TACT SWITCH(JUST EDIT)	
	S809	ESP0001-023M	TACT SWITCH(REPEAT)	
	S810	ESP0001-023M	TACT SWITCH(SIDE A/B)	
	S811	ESP0001-023M	TACT SWITCH(PROGRAM)	
	S812	ESP0001-023M	TACT SWITCH(BACKWARD SKIP)	
	S813	ESP0001-023M	TACT SWITCH(FORWARD SKIP)	
	S815	ESP0001-023M	TACT SWITCH(FM)	
	S816	ESP0001-023M	TACT SWITCH(AM)	
	S817	ESP0001-023M	TACT SWITCH(TUNING UP)	
	S818	ESP0001-023M	TACT SWITCH(TUNING DOWN)	
	S819	ESP0001-023M	TACT SWITCH(PLAY/PAUSE)	
	S820	ESP0001-023M	TACT SWITCH(STOP)	
	S821	ESP0001-023M	TACT SWITCH(SLEEP)	
	S825	ESP0001-023M	TACT SWITCH(PRESET DOWN)	
	S826	ESP0001-023M	TACT SWITCH(PRESET UP)	
	S827	ESP0001-023M	TACT SWITCH(OPEN/CLOSE)	
	S828	ESP0001-023M	TACT SWITCH(REC TIMER)	
	S829	ESP0001-023M	TACT SWITCH(CLOCK ADJUST)	
	S830	ESP0001-023M	TACT SWITCH(FM MODE, MUTE)	
	S831	ESP0001-023M	TACT SWITCH(MEMORY)	
	S833	ESP0001-023M	TACT SWITCH(AUX)	
	S834	ESP0001-023M	TACT SWITCH(LIVE-S)	
	S835	ESP0001-023M	TACT SWITCH(POWER)	
	S921	ESB1100-007	LEAF SWITCH(APACK)	
	S922	ESB1100-007	LEAF SWITCH(AC/O2)	
	S923	ESB1100-007	LEAF SWITCH(REV REC)	
	S924	ESB1100-007	LEAF SWITCH(BC/O2)	
	S925	ESB1100-007	LEAF SWITCH(BPACK)	
	S926	ESB1100-007	LEAF SWITCH(FWD REC)	
	S966	ESP0001-023M	TACT SWITCH(REWIND)	
	S967	ESP0001-023M	TACT SWITCH(REVERSE)	
	S968	ESP0001-023M	TACT SWITCH(STOP)	
	S969	ESP0001-023M	TACT SWITCH(PLAY)	
	S970	ESP0001-023M	TACT SWITCH(FAST FORWARD)	
	S971	ESP0001-023M	TACT SWITCH(DOLBY B)	
	S972	ESP0001-023M	TACT SWITCH(REV. MODE)	
	S973	ESP0001-023M	TACT SWITCH(CD DIRECT REC)	
	S974	ESP0001-023M	TACT SWITCH(HIGH SPEED DUBBING)	
	S975	ESP0001-023M	TACT SWITCH(REC PAUSE)	
	S976	ESP0001-023M	TACT SWITCH(A/B)	
	BC203	EWS26E-A920	SOCKET WIRE(14PIN) TO DECK	
	BC512	EWS293-0120	SOCKET WIRE(3PIN) MIC CB	
	BC991	EWS323-A912	SOCKET WIRE(3PIN) TO VOLUME IND.	
	BC992	EWS265-A417	SOCKET WIRE(5PIN) DIGITAL ECHO	D
	FL801	ELU0001-153	FL TUBE	
	FS820	E3400-431	FELT SPACER	
	FS903	E3400-431	FELT SPACER	
	FW101	EWR37B-16LST	FLAT WIRE(7PIN) TO TUNER CB	
	FW531	EWR35B-30LST	FLAT WIRE(5PIN) HEADPHONE	
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	A
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	B
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	C
	FW851	EWR38B-20LST	FLAT WIRE(8PIN) MIC CB	D
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	E
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	F
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	G
	FW851	EWR37B-20LST	FLAT WIRE(7PIN) MIC CB	H
	FW901	EWR35B-13LST	FLAT WIRE(5PIN) FL/-BP	

△ : SAFETY PARTS

Others

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	FW902	EWR36B-13LST	FLAT WIRE(6PIN) SPK/POWER CONT.	
	FW911	EWR36B-30LST	FLAT WIRE(6PIN) TO CD CB	
	JA701	EMV7123-025R	CONNECTOR(25PIN) TO CD CB	
	JA801	EMV5123-J070	PLUG ASSY(18PIN) TO KEY CB	
	JA851	EMV7123-017R	CONNECTOR(17PIN) TO DECK CONTROL CB	

△ : SAFETY PARTS.

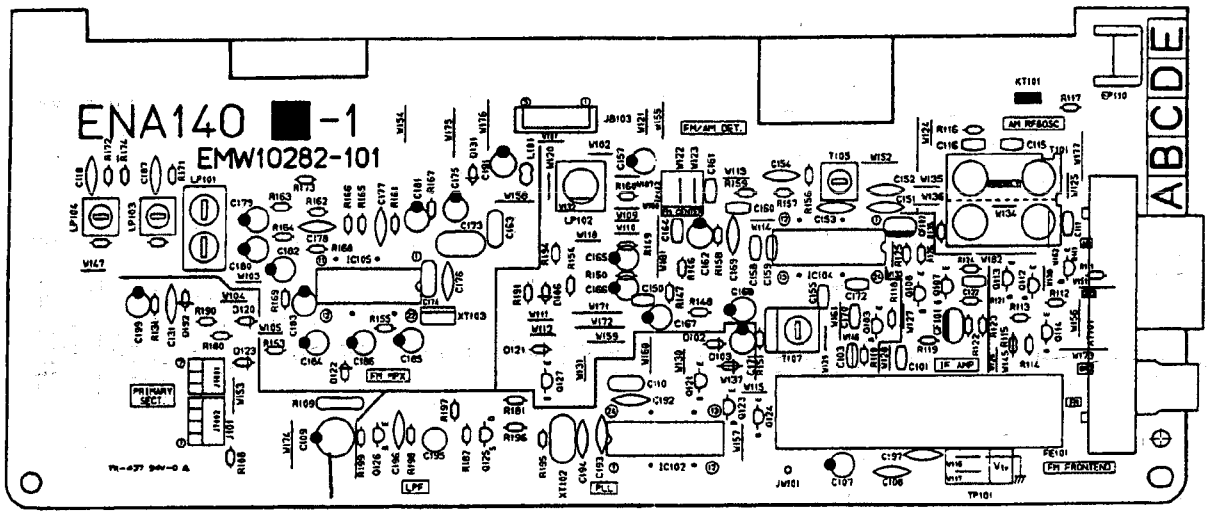
Others

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	JB801	EMV7124-009	CONNECTOR(9PIN) KEY CB	
	JB811	EMV7124-008	CONNECTOR(8PIN) KEY CB	
	JB851	EMV7123-017R	CONNECTOR(17PIN) DECK CONTROL CB	
	TC801	ENZ1003-015	TRIMMER	
	XT801	ECX4194-304CF	RESONATOR	
	XT901	ECX0004-194KM	RESONATOR	
	XT991	ECX0004-194KM	RESONATOR	D

△ : SAFETY PARTS.

■ENA-140 □ Tuner PC Board Ass'y

Note : ENA-140 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENA-140 [A]	the U.S.A., Canada
ENA-140 [B]	Taiwan, Universal Type
ENA-140 [C]	Australia
ENA-140 [D]	Scandinavia Continental Europe
ENA-140 [E]	Germany
ENA-140 [F]	the U.K.
ENA-140 [G]	Italy
ENA-140 [H]	East Europe

Transistors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q103	2SC461(B,C)	SILICON	HITACHI	
	Q107	2SC535(B,C)	SILICON	HITACHI	
	Q108	2SC461(B,C)	SILICON	HITACHI	
	Q111	2SD2144S(VW)	SILICON	ROHM	D
	Q111	2SD2144S(VW)	SILICON	ROHM	E
	Q111	2SD2144S(VW)	SILICON	ROHM	F
	Q111	2SD2144S(VW)	SILICON	ROHM	G
	Q111	2SD2144S(VW)	SILICON	ROHM	H
	Q112	2SD2144S(VW)	SILICON	ROHM	D
	Q112	2SD2144S(VW)	SILICON	ROHM	E
	Q112	2SD2144S(VW)	SILICON	ROHM	F
	Q112	2SD2144S(VW)	SILICON	ROHM	G
	Q112	2SD2144S(VW)	SILICON	ROHM	H
	Q113	2SD2144S(VW)	SILICON	ROHM	D
	Q113	2SD2144S(VW)	SILICON	ROHM	E
	Q113	2SD2144S(VW)	SILICON	ROHM	F
	Q113	2SD2144S(VW)	SILICON	ROHM	G
	Q113	2SD2144S(VW)	SILICON	ROHM	H
	Q114	2SC1740S(R,S)	SILICON	ROHM	D
	Q114	2SC1740S(R,S)	SILICON	ROHM	E
	Q114	2SC1740S(R,S)	SILICON	ROHM	F
	Q114	2SC1740S(R,S)	SILICON	ROHM	G
	Q114	2SC1740S(R,S)	SILICON	ROHM	H
	Q121	DTA144ES	SILICON	ROHM	D
	Q121	DTA144ES	SILICON	ROHM	E
	Q121	DTA144ES	SILICON	ROHM	F
	Q121	DTA144ES	SILICON	ROHM	G
	Q121	DTA144ES	SILICON	ROHM	H
	Q123	DTA144ES	SILICON	ROHM	
	Q124	DTA144ES	SILICON	ROHM	
	Q125	2SK301(Q2)	F.E.T	MATSUSHITA	
	Q126	2SC45B(D)	SILICON	HITACHI	
	Q127	DTC144ES	SILICON	ROHM	

△ : SAFETY PARTS.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC102	LC7218	I.C.	SANYO	
	IC104	LA1266A	I.C.	SANYO	
	IC105	LA3401	I.C.	SANYO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D102	1SS133	SILICON	ROHM	D
	D102	1SS133	SILICON	ROHM	E
	D102	1SS133	SILICON	ROHM	F
	D102	1SS133	SILICON	ROHM	G
	D102	1SS133	SILICON	ROHM	H
	D103	1SS133	SILICON	ROHM	D
	D103	1SS133	SILICON	ROHM	E
	D103	1SS133	SILICON	ROHM	F
	D103	1SS133	SILICON	ROHM	G
	D103	1SS133	SILICON	ROHM	H
	D106	1SS133	SILICON	ROHM	
	D120	1SS133	SILICON	ROHM	
	D121	1SS133	SILICON	ROHM	
	D122	1SS133	SILICON	ROHM	
	D123	1SS133	SILICON	ROHM	
	D192	MTZS.1JC	ZENER	ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C101	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C103	QCH81EZ-223	0.022MF	25V	CERAMIC	H
	C107	QETB1EM-226	22MF	25V	ELECTRO	E
	C107	QETB1EM-226	22MF	25V	ELECTRO	G
	C109	QETB1CM-227	220MF	16V	ELECTRO	
	C110	QCZ0202-155	1.5MF	25V	CERAMIC	
	C111	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C112	QCS21HJ-101	100PF	50V	CERAMIC	
	C115	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C116	QCT30CH-120	12PF	50V	CERAMIC	
	C122	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C131	QCF21HP-223	0.022MF	50V	CERAMIC	
	C150	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C151	QCF21HP-223	0.022MF	50V	CERAMIC	
	C152	QCF21HP-223	0.022MF	50V	CERAMIC	
	C153	QCC21EM-223	0.022MF	25V	CERAMIC	
	C155	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C157	QETB1HM-474	0.47MF	50V	ELECTRO	
	C158	QCB81HK-101	100PF	50V	CERAMIC	
	C159	QCB81HK-101	100PF	50V	CERAMIC	
	C160	QCB81HK-221	220PF	50V	CERAMIC	
	C161	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C162	QETB1HM-106	10MF	50V	ELECTRO	
	C163	QCF21HP-102	1000PF	50V	CERAMIC	
	C164	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C165	QETB1HM-474	0.47MF	50V	ELECTRO	
	C166	QETB1HM-225	2.2MF	50V	ELECTRO	
	C167	QETB1HM-225	2.2MF	50V	ELECTRO	
	C168	QETB1HM-475	4.7MF	50V	ELECTRO	
	C169	QCF21HP-223	0.022MF	50V	CERAMIC	
	C170	QCH81EZ-223	0.022MF	25V	CERAMIC	
	C171	QETB1HM-106	10MF	50V	ELECTRO	
	C172	QCV81CM-103	0.01MF	16V	CERAMIC	
	C173	QFN81HJ-393	0.039MF	50V	MYLAR	A
	C173	QFN81HJ-393	0.039MF	50V	MYLAR	B
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	C
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	D
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	E
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	F
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	G
	C173	QFN81HJ-223	0.022MF	50V	MYLAR	H
	C174	QFL81HK-473	0.047MF	50V	MYLAR	
	C175	QETB1HM-106	10MF	50V	ELECTRO	
	C176	QCY21HK-102	1000PF	50V	CERAMIC	
	C177	QCS21HJ-821	820PF	50V	CERAMIC	A
	C177	QCS21HJ-821	820PF	50V	CERAMIC	B
	C177	QCS21HJ-391	390PF	50V	CERAMIC	C
	C177	QCS21HJ-471	470PF	50V	CERAMIC	D
	C177	QCS21HJ-471	470PF	50V	CERAMIC	E
	C177	QCS21HJ-561	560PF	50V	CERAMIC	F
	C177	QCS21HJ-471	470PF	50V	CERAMIC	G
	C177	QCS21HJ-471	470PF	50V	CERAMIC	H
	C178	QCS21HJ-821	820PF	50V	CERAMIC	A
	C178	QCS21HJ-821	820PF	50V	CERAMIC	B
	C178	QCS21HJ-391	390PF	50V	CERAMIC	C
	C178	QCS21HJ-471	470PF	50V	CERAMIC	D
	C178	QCS21HJ-471	470PF	50V	CERAMIC	E
	C178	QCS21HJ-561	560PF	50V	CERAMIC	F
	C178	QCS21HJ-471	470PF	50V	CERAMIC	G
	C178	QCS21HJ-471	470PF	50V	CERAMIC	H

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	C179	QETB1HM-225	2.2MF	50V	ELECTRO	
	C180	QETB1HM-225	2.2MF	50V	ELECTRO	
	C181	QCF21HP-473	0.047MF	50V	CERAMIC	
	C182	QETB1HM-225	2.2MF	50V	ELECTRO	
	C183	QETB1HM-105	1MF	50V	ELECTRO	
	C184	QETB1HM-105	1MF	50V	ELECTRO	
	C185	QETB1HM-225	2.2MF	50V	ELECTRO	
	C186	QETB1HM-474	0.47MF	50V	ELECTRO	
	C187	QCY21HK-332	3300PF	50V	CERAMIC	
	C188	QCY21HK-332	3300PF	50V	CERAMIC	
	C191	QETB1HM-475	4.7MF	50V	ELECTRO	
	C192	QCC21EM-473	0.047MF	25V	CERAMIC	
	C193	QCS21HJ-180	18PF	50V	CERAMIC	
	C194	QCS21HJ-180	18PF	50V	CERAMIC	
	C195	QEN51HM-474	0.47MF	50V	NON POLE	
	C196	QCY21HK-102	1000PF	50V	CERAMIC	
	C197	QCF21HP-223	0.022MF	50V	CERAMIC	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R108	QRD167J-103	10K	1/6W	CARBON	
⚠	R109	QRZ0077-680	68	1/4W	FUSIBLE	
	R110	QRD167J-473	47K	1/6W	CARBON	H
	R111	QRD167J-472	4.7K	1/6W	CARBON	D
	R111	QRD167J-472	4.7K	1/6W	CARBON	E
	R111	QRD167J-472	4.7K	1/6W	CARBON	F
	R111	QRD167J-472	4.7K	1/6W	CARBON	G
	R111	QRD167J-472	4.7K	1/6W	CARBON	H
	R112	QRD167J-472	4.7K	1/6W	CARBON	D
	R112	QRD167J-472	4.7K	1/6W	CARBON	E
	R112	QRD167J-472	4.7K	1/6W	CARBON	F
	R112	QRD167J-472	4.7K	1/6W	CARBON	G
	R112	QRD167J-472	4.7K	1/6W	CARBON	H
	R113	QRD167J-472	4.7K	1/6W	CARBON	D
	R113	QRD167J-472	4.7K	1/6W	CARBON	E
	R113	QRD167J-472	4.7K	1/6W	CARBON	F
	R113	QRD167J-472	4.7K	1/6W	CARBON	G
	R113	QRD167J-472	4.7K	1/6W	CARBON	H
	R114	QRD167J-103	10K	1/6W	CARBON	D
	R114	QRD167J-103	10K	1/6W	CARBON	E
	R114	QRD167J-103	10K	1/6W	CARBON	F
	R114	QRD167J-103	10K	1/6W	CARBON	G
	R114	QRD167J-103	10K	1/6W	CARBON	H
	R115	QRD167J-101	100	1/6W	CARBON	E
	R115	QRD167J-101	100	1/6W	CARBON	G
	R116	QRD167J-104	100K	1/6W	CARBON	
	R117	QRD167J-103	10K	1/6W	CARBON	D
	R117	QRD167J-103	10K	1/6W	CARBON	E
	R117	QRD167J-103	10K	1/6W	CARBON	F
	R117	QRD167J-103	10K	1/6W	CARBON	G
	R117	QRD167J-103	10K	1/6W	CARBON	H
	R118	QRD167J-332	3.3K	1/6W	CARBON	
	R119	QRD161J-221	220	1/6W	CARBON	
	R121	QRD167J-391	390	1/6W	CARBON	
	R122	QRD167J-272	2.7K	1/6W	CARBON	
	R123	QRD167J-102	1K	1/6W	CARBON	
	R124	QRD167J-681	680	1/6W	CARBON	
	R125	QRD167J-332	3.3K	1/6W	CARBON	
	R126	QRD161J-221	220	1/6W	CARBON	
	R131	QRD167J-222	2.2K	1/6W	CARBON	
	R135	QRD167J-470	47	1/6W	CARBON	
	R146	QRD167J-560	56	1/6W	CARBON	
	R147	QRD167J-103	10K	1/6W	CARBON	
	R148	QRD167J-103	10K	1/6W	CARBON	
	R149	QRD167J-223	22K	1/6W	CARBON	
	R150	QRD167J-103	10K	1/6W	CARBON	
	R151	QRD167J-222	2.2K	1/6W	CARBON	
	R153	QRD167J-103	10K	1/6W	CARBON	
	R154	QRD167J-103	10K	1/6W	CARBON	
	R155	QRD167J-562	5.6K	1/6W	CARBON	
	R156	QRD167J-822	8.2K	1/6W	CARBON	
	R157	QRD167J-103	10K	1/6W	CARBON	
	R158	QRD167J-183	18K	1/6W	CARBON	A
	R158	QRD167J-273	27K	1/6W	CARBON	B
	R158	QRD167J-273	27K	1/6W	CARBON	C
	R158	QRD167J-273	27K	1/6W	CARBON	D
	R158	QRD167J-273	27K	1/6W	CARBON	E
	R158	QRD167J-273	27K	1/6W	CARBON	F
	R158	QRD167J-273	27K	1/6W	CARBON	G
	R158	QRD167J-273	27K	1/6W	CARBON	H
	R159	QRD167J-561	560	1/6W	CARBON	
	R160	QRD167J-562	5.6K	1/6W	CARBON	A
	R160	QRD167J-562	5.6K	1/6W	CARBON	B
	R160	QRD167J-183	18K	1/6W	CARBON	C
	R160	QRD167J-183	18K	1/6W	CARBON	D
	R160	QRD167J-183	18K	1/6W	CARBON	E
	R160	QRD167J-822	8.2K	1/6W	CARBON	F
	R160	QRD167J-183	18K	1/6W	CARBON	G
	R160	QRD167J-183	18K	1/6W	CARBON	H
	R161	QRD167J-823	82K	1/6W	CARBON	A

⚠ : SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R161	QRD167J-823	82K 1/6W CARBON	B
	R161	QRD167J-124	120K 1/6W CARBON	C
	R161	QRD167J-124	120K 1/6W CARBON	D
	R161	QRD167J-124	120K 1/6W CARBON	E
	R161	QRD167J-823	82K 1/6W CARBON	F
	R161	QRD167J-124	120K 1/6W CARBON	G
	R161	QRD167J-124	120K 1/6W CARBON	H
	R162	QRD167J-823	82K 1/6W CARBON	A
	R162	QRD167J-823	82K 1/6W CARBON	B
	R162	QRD167J-124	120K 1/6W CARBON	C
	R162	QRD167J-124	120K 1/6W CARBON	D
	R162	QRD167J-124	120K 1/6W CARBON	E
	R162	QRD167J-823	82K 1/6W CARBON	F
	R162	QRD167J-124	120K 1/6W CARBON	G
	R162	QRD167J-124	120K 1/6W CARBON	H
	R163	QRD167J-472	4.7K 1/6W CARBON	A
	R163	QRD167J-472	4.7K 1/6W CARBON	B
	R163	QRD167J-332	3.3K 1/6W CARBON	C
	R163	QRD167J-332	3.3K 1/6W CARBON	D
	R163	QRD167J-332	3.3K 1/6W CARBON	E
	R163	QRD167J-332	3.3K 1/6W CARBON	F
	R163	QRD167J-332	3.3K 1/6W CARBON	G
	R163	QRD167J-332	3.3K 1/6W CARBON	H
	R164	QRD167J-472	4.7K 1/6W CARBON	A
	R164	QRD167J-472	4.7K 1/6W CARBON	B
	R164	QRD167J-332	3.3K 1/6W CARBON	C
	R164	QRD167J-332	3.3K 1/6W CARBON	D
	R164	QRD167J-332	3.3K 1/6W CARBON	E
	R164	QRD167J-332	3.3K 1/6W CARBON	F
	R164	QRD167J-332	3.3K 1/6W CARBON	G
	R164	QRD167J-332	3.3K 1/6W CARBON	H
	R165	QRD167J-184	180K 1/6W CARBON	A
	R165	QRD167J-184	180K 1/6W CARBON	B
	R165	QRD167J-274	270K 1/6W CARBON	C
	R165	QRD167J-274	270K 1/6W CARBON	D
	R165	QRD167J-274	270K 1/6W CARBON	E
	R165	QRD167J-274	270K 1/6W CARBON	F
	R165	QRD167J-274	270K 1/6W CARBON	G
	R165	QRD167J-274	270K 1/6W CARBON	H
	R166	QRD167J-184	180K 1/6W CARBON	A
	R166	QRD167J-184	180K 1/6W CARBON	B
	R166	QRD167J-274	270K 1/6W CARBON	C
	R166	QRD167J-274	270K 1/6W CARBON	D
	R166	QRD167J-274	270K 1/6W CARBON	E
	R166	QRD167J-274	270K 1/6W CARBON	F
	R166	QRD167J-274	270K 1/6W CARBON	G
	R166	QRD167J-274	270K 1/6W CARBON	H
	R167	QRD167J-393	39K 1/6W CARBON	A
	R167	QRD167J-393	39K 1/6W CARBON	B
	R167	QRD167J-393	39K 1/6W CARBON	C
	R167	QRD167J-473	47K 1/6W CARBON	D
	R167	QRD167J-473	47K 1/6W CARBON	E
	R167	QRD167J-473	47K 1/6W CARBON	F
	R167	QRD167J-473	47K 1/6W CARBON	G
	R167	QRD167J-473	47K 1/6W CARBON	H
	R168	QRD167J-103	10K 1/6W CARBON	
	R169	QRD167J-103	10K 1/6W CARBON	
	R180	QRD167J-103	10K 1/6W CARBON	
	R181	QRD167J-222	2.2K 1/6W CARBON	
	R182	QRD167J-181	180 1/6W CARBON	
	R190	QRD167J-103	10K 1/6W CARBON	
	R191	QRD167J-562	5.6K 1/6W CARBON	
	R194	QRD167J-103	10K 1/6W CARBON	
	R195	QRD167J-473	47K 1/6W CARBON	
	R196	QRD167J-103	10K 1/6W CARBON	A
	R196	QRD167J-103	10K 1/6W CARBON	B
	R196	QRD167J-103	10K 1/6W CARBON	C
	R196	QRD167J-222	2.2K 1/6W CARBON	D
	R196	QRD167J-222	2.2K 1/6W CARBON	E
	R196	QRD167J-222	2.2K 1/6W CARBON	F
	R196	QRD167J-222	2.2K 1/6W CARBON	G
	R196	QRD167J-222	2.2K 1/6W CARBON	H
	R197	QRD167J-222	2.2K 1/6W CARBON	
	R198	QRD167J-332	3.3K 1/6W CARBON	A
	R198	QRD167J-332	3.3K 1/6W CARBON	B
	R198	QRD167J-332	3.3K 1/6W CARBON	C
	R198	QRD167J-822	8.2K 1/6W CARBON	D
	R198	QRD167J-822	8.2K 1/6W CARBON	E
	R198	QRD167J-822	8.2K 1/6W CARBON	F
	R198	QRD167J-822	8.2K 1/6W CARBON	G
	R198	QRD167J-822	8.2K 1/6W CARBON	H
	R199	QRD167J-472	4.7K 1/6W CARBON	

△ : SAFETY PARTS

Others

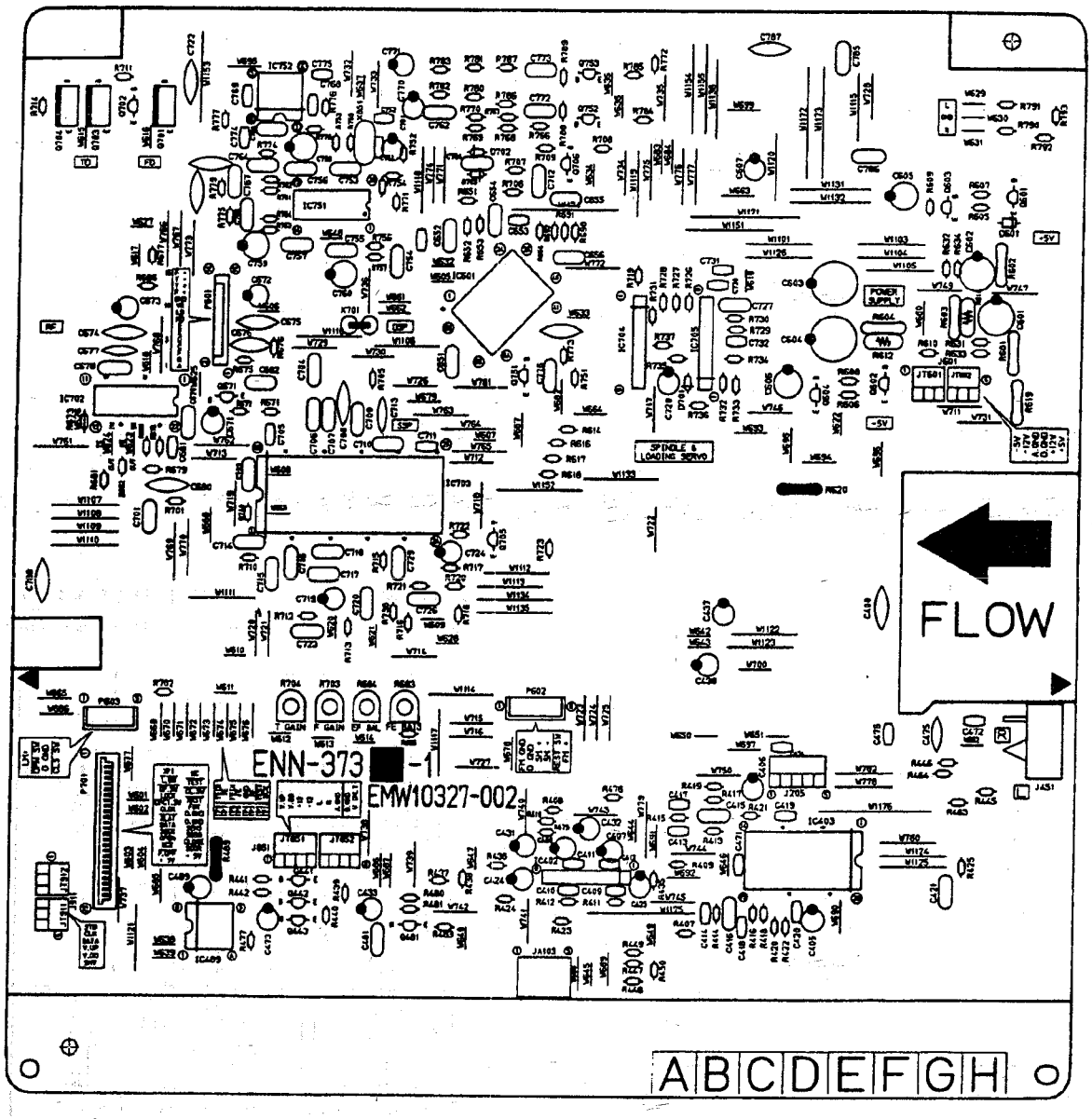
△	ITEM	PART NUMBER	DESCRIPTION	AREA
	L101	EQL4007-1R0T	INDUCTOR	
	T101	EQR7121-004	RF COIL	A
	T101	EQR7121-004	RF COIL	B
	T101	EQR7121-004	RF COIL	C
	T101	EQR7121-002		D
	T101	EQR7121-002		E
	T101	EQR7121-002		F
	T101	EQR7121-002		G
	T101	EQR7121-002		H
	T105	EQT2140-017	I.F. TRANSFORMER	
	T107	ECB1560-010	CERAMIC FILTER	
	AT101	EM841YV-301K	ANTENNA TERMINAL	
	CF101	ECB2123-006R	CERAMIC FILTER	A
	CF101	ECB2123-006R	CERAMIC FILTER	B
	CF101	ECB2123-006R	CERAMIC FILTER	C
	CF101	ECB2118-007R	CERAMIC FILTER	D
	CF101	ECB2118-007R	CERAMIC FILTER	E
	CF101	ECB2118-007R	CERAMIC FILTER	F
	CF101	ECB2118-007R	CERAMIC FILTER	G
	CF101	ECB2118-007R	CERAMIC FILTER	H
	CF102	ECB2123-006R	CERAMIC FILTER	A
	CF102	ECB2123-006R	CERAMIC FILTER	B
	CF102	ECB2123-006R	CERAMIC FILTER	C
	CF102	ECB2118-007R	CERAMIC FILTER	D
	CF102	ECB2118-007R	CERAMIC FILTER	E
	CF102	ECB2118-007R	CERAMIC FILTER	F
	CF102	ECB2118-007R	CERAMIC FILTER	G
	CF102	ECB2118-007R	CERAMIC FILTER	H
	EP110	E70225-001	EARTH PLATE	
	EP111	E308500-002	SHIELD PLATE	
	FE101	EAF2203-001	FRONT END	A
	FE101	EAF2203-001	FRONT END	B
	FE101	EAF2203-001	FRONT END	C
	FE101	EAF2203-001	FRONT END	D
	FE101	EAF2203-003	FRONT END	E
	FE101	EAF2203-001	FRONT END	F
	FE101	EAF2203-003	FRONT END	G
	FE101	EAF2302-001	FRONT END	H
	JB103	EMV5125-005	PLUG ASSY(5PIN) POWER/SOUND	
	JT001	EMV7122-103	CONNECTOR(3PIN) PART OF P101	
	JT002	EMV7122-004	CONNECTOR(4PIN) PART OF P101	
	LP102	EQF0102-001	LOW PASS FILTER	E
	LP102	EQF0102-001	LOW PASS FILTER	G
	LP103	EQF0101-010	LOW PASS FILTER	
	LP104	EQF0101-010	LOW PASS FILTER	
	XT102	ECX0007-200KC	RESONATOR	
	XT103	ECX0000-456KR	RESONATOR	

△ : SAFETY PARTS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

■ENN-373☐ CD & Source Selector PC Board Ass'y

Note : ENN-373 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENN-373 [A]	the U.S.A., Canada
ENN-373 [B]	Australia, Scandinavia Continental Europe the U.K., East Europe
ENN-373 [C]	Germany, Italy
ENN-373 [D]	Taiwan, Universal Type

Transistors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q441	2SD2144S(VW)	SILICON	ROHM	
	Q442	2SD2144S(VW)	SILICON	ROHM	
	Q443	DTA144ES	SILICON	ROHM	
	Q481	2SC1685(R,S)	SILICON	MATSUSHITA	
	Q601	2SA934(Q,R)	SILICON	ROHM	
	Q602	2SC1685(R,S)	SILICON	MATSUSHITA	
	Q603	DTC144ES	SILICON	ROHM	
	Q604	DTA144WS	SILICON	ROHM	
	Q671	2SA934(Q,R)	SILICON	ROHM	
	Q701	2SD2037(E,F)	SILICON	ROHM	
	Q702	2SA934(Q,R)	SILICON	ROHM	
	Q703	2SD2037(E,F)	SILICON	ROHM	
	Q704	2SB1357(E,F)	SILICON	ROHM	
	Q705	DTC144ES	SILICON	ROHM	
	Q706	2SC1685(R,S)	SILICON	MATSUSHITA	
	Q751	DTA144ES	SILICON	ROHM	
	Q752	2SC1685(R,S)	SILICON	MATSUSHITA	
	Q753	2SC1685(R,S)	SILICON	MATSUSHITA	

△ : SAFETY PARTS

I.C.s

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	IC402	BA15218N	I.C.	ROHM		
	IC403	TC9164N	I.C.	TOSHIBA		
	IC489	LB1639-CV	I.C.	SANYO		
	IC701	CXD2500BQ	I.C.	1680		
	IC702	CXA1571S	I.C.	1680		
	IC703	CXA1372S	I.C.	1680		
	IC704	STA341M(A)	I.C.	SANKEN		
	IC705	M5218AL	I.C.	MITSUBISHI		
	IC751	MN35501	I.C.	MATSUSHITA		
	IC752	BA15218	I.C.	ROHM		

△ : SAFETY PARTS

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	D601	1SR139-200	SILICON	ROHM	
	D701	1SS119	SILICON	HITACHI	
	D702	1SS133	SILICON	ROHM	
	D703	1SS133	SILICON	ROHM	

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C405	QET81HM-475	4.7MF	50V	ELECTRO	
	C406	QET81HM-475	4.7MF	50V	ELECTRO	
	C407	QET81HM-106	10MF	50V	ELECTRO	
	C408	QET81HM-106	10MF	50V	ELECTRO	
	C409	QCS81HJ-100	10PF	50V	CERAMIC	
	C410	QCS81HJ-100	10PF	50V	CERAMIC	
	C411	QCS81HJ-470	47PF	50V	CERAMIC	
	C412	QCS81HJ-470	47PF	50V	CERAMIC	
	C413	QCBB1HK-181	180PF	50V	CERAMIC	
	C414	QCBB1HK-181	180PF	50V	CERAMIC	
	C415	QFN81HJ-153	0.015MF	50V	MYLAR	
	C416	QFN81HJ-153	0.015MF	50V	MYLAR	
	C417	QCXB1CM-222	2200PF	16V	CERAMIC	
	C418	QCXB1CM-222	2200PF	16V	CERAMIC	
	C419	QCBB1HK-471	470PF	50V	CERAMIC	
	C420	QCBB1HK-471	470PF	50V	CERAMIC	
	C421	QCY21HK-562	5600PF	50V	CERAMIC	
	C423	QET81HM-475	4.7MF	50V	ELECTRO	
	C424	QET81HM-475	4.7MF	50V	ELECTRO	
	C431	QET81CM-476	47MF	16V	ELECTRO	
	C432	QET81CM-476	47MF	16V	ELECTRO	
	C433	QET81HM-225	2.2MF	50V	ELECTRO	
	C437	QET81CM-107	100MF	16V	ELECTRO	
	C438	QET81CM-107	100MF	16V	ELECTRO	
	C471	QCBB1HK-561	560PF	50V	CERAMIC	
	C472	QCV81CM-103	0.01MF	16V	CERAMIC	C
	C473	QET81HM-105	1MF	50V	ELECTRO	
	C474	QCHB1EZ-223	0.022MF	25V	CERAMIC	C
	C475	QCF21HP-223	0.022MF	50V	CERAMIC	C
	C681	QFN81HJ-223	0.022MF	50V	MYLAR	
	C489	QET81AM-476	47MF	10V	ELECTRO	
	C603	QET81CM-108	1000MF	16V	ELECTRO	
	C604	QET81CM-108	1000MF	16V	ELECTRO	
	C605	QET80JM-227	220MF	6.3V	ELECTRO	
	C606	QET80JM-107	100MF	6.3V	ELECTRO	
	C607	QET81HM-106	10MF	50V	ELECTRO	
	C651	QCZ0202-155	1.5MF	25V	CERAMIC	
	C652	QFN81HJ-473	0.047MF	50V	MYLAR	
	C653	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C654	QFN81HJ-152	1500PF	50V	MYLAR	
	C655	QFN81HJ-102	1000PF	50V	MYLAR	
	C656	QCZ0202-155	1.5MF	25V	CERAMIC	
	C671	QET81AM-107	100MF	10V	ELECTRO	
	C673	QET81AM-476	47MF	10V	ELECTRO	
	C674	QCS21HJ-100	10PF	50V	CERAMIC	
	C675	QCS21HJ-820	82PF	50V	CERAMIC	
	C676	QCS21HJ-101	100PF	50V	CERAMIC	
	C677	QCS21HJ-100	10PF	50V	CERAMIC	
	C678	QCZ0202-155	1.5MF	25V	CERAMIC	
	C679	QCZ0202-155	1.5MF	25V	CERAMIC	
	C680	QCS21HJ-220	22PF	50V	CERAMIC	
	C681	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C701	QFN81HJ-182	1800PF	50V	MYLAR	
	C703	QFN81HJ-222	2200PF	50V	MYLAR	
	C704	QFN81HJ-222	2200PF	50V	MYLAR	
	C705	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C706	QFN81HJ-333	0.033MF	50V	MYLAR	
	C707	QFN81HJ-103	0.01MF	50V	MYLAR	
	C708	QCF21HP-223	0.022MF	50V	CERAMIC	
	C709	QFN81HJ-333	0.033MF	50V	MYLAR	
	C710	QFV81HJ-104	0.1MF	50V	T.FILM	
	C711	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C712	QFN81HJ-104	0.1MF	50V	MYLAR	
	C714	QFN81HJ-104	0.1MF	50V	MYLAR	
	C715	QFN81HJ-333	0.033MF	50V	MYLAR	

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C716	QFN81HJ-473	0.047MF	50V	MYLAR	
	C717	QFN81HJ-473	0.047MF	50V	MYLAR	
	C718	QFN81HJ-473	0.047MF	50V	MYLAR	
	C719	QET81HM-106	10MF	50V	ELECTRO	
	C720	QFN81HJ-104	0.1MF	50V	MYLAR	
	C722	QCF21HP-223	0.022MF	50V	CERAMIC	
	C723	QFN81HJ-333	0.033MF	50V	MYLAR	
	C724	QET81HM-106	10MF	50V	ELECTRO	
	C726	QFN81HJ-223	0.022MF	50V	MYLAR	
	C727	QFN81HJ-103	0.01MF	50V	MYLAR	
	C728	QET81HM-475	4.7MF	50V	ELECTRO	
	C729	QFN81HJ-393	0.039MF	50V	MYLAR	
	C730	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C731	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C732	QCBB1HK-681	680PF	50V	CERAMIC	
	C751	QCT30CH-8R2	8.2PF	50V	CERAMIC	
	C752	QCT30CH-3R9	3.9PF	50V	CERAMIC	
	C753	QFV81HJ-104	0.1MF	50V	T.FILM	
	C755	QFV81HJ-104	0.1MF	50V	T.FILM	
	C756	QFV81HJ-104	0.1MF	50V	T.FILM	
	C757	QFV81HJ-104	0.1MF	50V	T.FILM	
	C758	QET80JM-227	220MF	6.3V	ELECTRO	
	C759	QET80JM-227	220MF	6.3V	ELECTRO	
	C760	QET80JM-227	220MF	6.3V	ELECTRO	
	C761	QET81AM-476	47MF	10V	ELECTRO	
	C762	QFN81HJ-122	1200PF	50V	MYLAR	
	C764	QFN81HJ-122	1200PF	50V	MYLAR	
	C765	QFN81HJ-122	1200PF	50V	MYLAR	
	C766	QFN81HJ-122	1200PF	50V	MYLAR	
	C767	QFN81HJ-122	1200PF	50V	MYLAR	
	C768	QCBB1HK-101	100PF	50V	CERAMIC	
	C769	QCBB1HK-101	100PF	50V	CERAMIC	
	C770	QET81EM-226	22MF	25V	ELECTRO	
	C771	QET81EM-226	22MF	25V	ELECTRO	
	C772	QFN81HJ-683	0.068MF	50V	MYLAR	
	C773	QFN81HJ-683	0.068MF	50V	MYLAR	
	C774	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C775	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C784	QFV81HJ-104	0.1MF	50V	T.FILM	
	C788	QCF21HP-223	0.022MF	50V	CERAMIC	

△ : SAFETY PARTS

Resistors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R407	QRD167J-104	100K	1/6W	CARBON	
	R408	QRD167J-104	100K	1/6W	CARBON	
	R409	QRD167J-393	39K	1/6W	CARBON	
	R410	QRD167J-393	39K	1/6W	CARBON	
	R411	QRD167J-104	100K	1/6W	CARBON	
	R412	QRD167J-104	100K	1/6W	CARBON	
	R413	QRD167J-104	100K	1/6W	CARBON	
	R414	QRD167J-104	100K	1/6W	CARBON	
	R415	QRD167J-473	47K	1/6W	CARBON	
	R416	QRD167J-473	47K	1/6W	CARBON	
	R417	QRD167J-822	8.2K	1/6W	CARBON	
	R418	QRD167J-822	8.2K	1/6W	CARBON	
	R419	QRD167J-203	20K	1/6W	CARBON	
	R420	QRD167J-203	20K	1/6W	CARBON	
	R421	QRD167J-393	39K	1/6W	CARBON	
	R422	QRD167J-393	39K	1/6W	CARBON	
	R423	QRD167J-104	100K	1/6W	CARBON	
	R424	QRD167J-104	100K	1/6W	CARBON	
	R425	QRD167J-273	27K	1/6W	CARBON	
	R435	QRD167J-472	4.7K	1/6W	CARBON	
	R436	QRD167J-472	4.7K	1/6W	CARBON	
	R437	QRD167J-332	3.3K	1/6W	CARBON	A
	R437	QRD167J-332	3.3K	1/6W	CARBON	B
	R437	QRD167J-332	3.3K	1/6W	CARBON	C
	R438	QRD167J-332	3.3K	1/6W	CARBON	A
	R438	QRD167J-332	3.3K	1/6W	CARBON	B
	R438	QRD167J-332	3.3K	1/6W	CARBON	C
	R439	QRD167J-224	220K	1/6W	CARBON	
	R440	QRD167J-224	220K	1/6W	CARBON	
	R441	QRD167J-103	10K	1/6W	CARBON	
	R442	QRD167J-103	10K	1/6W	CARBON	
	R445	QRD167J-303	30K	1/6W	CARBON	
	R446	QRD167J-303	30K	1/6W	CARBON	
	R447	QRD167J-432	4.3K	1/6W	CARBON	
	R448	QRD167J-432	4.3K	1/6W	CARBON	
	R449	QRD167J-132	1.3K	1/6W	CARBON	
	R450	QRD167J-132	1.3K	1/6W	CARBON	
	R463	QRD167J-243	24K	1/6W	CARBON	
	R464	QRD167J-243	24K	1/6W	CARBON	
	R475	QRD167J-271	270	1/6W	CARBON	
	R476	QRD167J-271	270	1/6W	CARBON	
	R477	QRD167J-102	1K	1/6W	CARBON	
	R480	QRD167J-222	2.2K	1/6W	CARBON	
	R481	QRD167J-105	1M	1/6W	CARBON	
	R483	QRD167J-222	2.2K	1/6W	CARBON	

△ : SAFETY PARTS

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
⚠	R489	QRD14CJ-220S	22	1/4W	UNF.CARBON	
⚠	R601	QRD14CJ-100S	10	1/4W	UNF.CARBON	A
⚠	R601	QRZ0077-100	10	1/4W	FUSIBLE	B
⚠	R601	QRZ0077-100	10	1/4W	FUSIBLE	C
⚠	R601	QRZ0077-100	10	1/4W	FUSIBLE	D
⚠	R602	QRD14CJ-100S	10	1/4W	UNF.CARBON	A
⚠	R602	QRZ0077-100	10	1/4W	FUSIBLE	B
⚠	R602	QRZ0077-100	10	1/4W	FUSIBLE	C
⚠	R602	QRZ0077-100	10	1/4W	FUSIBLE	D
	R605	QRD167J-472	4.7K	1/6W	CARBON	
	R606	QRD167J-472	4.7K	1/6W	CARBON	
	R607	QRD167J-471	470	1/6W	CARBON	
	R608	QRD167J-182	1.8K	1/6W	CARBON	
	R609	QRD167J-103	10K	1/6W	CARBON	
	R610	QRD167J-472	4.7K	1/6W	CARBON	
⚠	R611	PTH61G25AR4R7M			FUSIBLE RE SI	
⚠	R612	PTH61G25AR4R7M			FUSIBLE RE SI	
	R614	QRD167J-102	1K	1/6W	CARBON	
	R616	QRD167J-102	1K	1/6W	CARBON	
	R617	QRD167J-391	390	1/6W	CARBON	
	R618	QRD167J-102	1K	1/6W	CARBON	
⚠	R619	QRD14CJ-5R6S	5.6	1/4W	UNF.CARBON	A
⚠	R619	QRZ0077-5R6	5.6	1/4W	FUSIBLE	B
⚠	R619	QRZ0077-5R6	5.6	1/4W	FUSIBLE	C
⚠	R619	QRZ0077-5R6	5.6	1/4W	FUSIBLE	D
⚠	R620	QRD14CJ-470S	47	1/4W	UNF.CARBON	A
⚠	R620	QRZ0077-470	47	1/4W	FUSIBLE	B
⚠	R620	QRZ0077-470	47	1/4W	FUSIBLE	C
⚠	R620	QRZ0077-470	47	1/4W	FUSIBLE	D
	R651	QRD167J-332	3.3K	1/6W	CARBON	
	R652	QRD167J-682	6.8K	1/6W	CARBON	
	R653	QRD167J-103	10K	1/6W	CARBON	
	R654	QRD167J-103	10K	1/6W	CARBON	
	R671	QRD167J-100	10	1/6W	CARBON	
	R672	QRD167J-120	12	1/6W	CARBON	
	R673	QRD167J-102	1K	1/6W	CARBON	
	R675	QRD167J-183	18K	1/6W	CARBON	
	R676	QRD167J-183	18K	1/6W	CARBON	
	R677	QRD167J-121	120	1/6W	CARBON	
	R678	QRD167J-103	10K	1/6W	CARBON	
	R679	QRD167J-332	3.3K	1/6W	CARBON	
	R680	QRD167J-822	8.2K	1/6W	CARBON	
	R681	QRD167J-113	11K	1/6W	CARBON	
	R682	QRD167J-104	100K	1/6W	CARBON	
	R683	QVPA601-203A	20K		VARIABLE	
	R684	QVPA601-203A	20K		VARIABLE	
	R685	QRD167J-103	10K	1/6W	CARBON	
	R686	QRD167J-910	91	1/6W	CARBON	
	R690	QRD167J-102	1K	1/6W	CARBON	
	R691	QRD167J-102	1K	1/6W	CARBON	
	R692	QRD167J-102	1K	1/6W	CARBON	
	R701	QRD167J-472	4.7K	1/6W	CARBON	
	R702	QRD167J-472	4.7K	1/6W	CARBON	
	R703	QVPA601-203A	20K		VARIABLE	
	R704	QVPA601-203A	20K		VARIABLE	
	R705	QRD167J-102	1K	1/6W	CARBON	
	R706	QRD167J-104	100K	1/6W	CARBON	
	R707	QRD167J-103	10K	1/6W	CARBON	
	R708	QRD167J-273	27K	1/6W	CARBON	
	R709	QRD167J-273	27K	1/6W	CARBON	
	R710	QRD167J-224	220K	1/6W	CARBON	
	R711	QRD167J-2R2	2.2	1/6W	CARBON	
	R712	QRD167J-164	160K	1/6W	CARBON	
	R713	QRD167J-134	130K	1/6W	CARBON	
	R714	QRD167J-2R2	2.2	1/6W	CARBON	
	R715	QRD167J-224	220K	1/6W	CARBON	
	R716	QRD167J-333	33K	1/6W	CARBON	
	R717	QRD167J-103	10K	1/6W	CARBON	
	R718	QRD167J-514	510K	1/6W	CARBON	
	R719	QRD167J-2R2	2.2	1/6W	CARBON	
	R720	QRD167J-123	12K	1/6W	CARBON	
	R721	QRD167J-333	33K	1/6W	CARBON	
	R722	QRD167J-124	120K	1/6W	CARBON	
	R723	QRD167J-472	4.7K	1/6W	CARBON	
	R726	QRD167J-203	20K	1/6W	CARBON	
	R727	QRD167J-273	27K	1/6W	CARBON	
	R728	QRD167J-752	7.5K	1/6W	CARBON	
	R729	QRD167J-752	7.5K	1/6W	CARBON	
	R730	QRD167J-333	33K	1/6W	CARBON	
	R731	QRD167J-2R2	2.2	1/6W	CARBON	
	R732	QRD167J-513	51K	1/6W	CARBON	
	R733	QRD167J-513	51K	1/6W	CARBON	
	R734	QRD167J-683	68K	1/6W	CARBON	
	R735	QRD167J-683	68K	1/6W	CARBON	
	R736	QRD167J-684	680K	1/6W	CARBON	
	R737	QRD161J-221	220	1/6W	CARBON	
	R738	QRD167J-823	82K	1/6W	CARBON	
	R740	QRD167J-275	2.7M	1/6W	CARBON	
	R751	QRD167J-103	10K	1/6W	CARBON	
	R752	QRD167J-101	100	1/6W	CARBON	
	R753	QRD167J-103	10K	1/6W	CARBON	
	R754	QRD167J-103	10K	1/6W	CARBON	
	R755	QRD167J-330	33	1/6W	CARBON	
	R756	QRD167J-560	56	1/6W	CARBON	
	R761	QRD167J-183	18K	1/6W	CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION			AREA
	R762	QRD167J-183	18K	1/6W	CARBON	
	R763	QRD167J-183	18K	1/6W	CARBON	
	R764	QRD167J-183	18K	1/6W	CARBON	
	R766	QRD167J-271	270	1/6W	CARBON	
	R767	QRD167J-682	6.8K	1/6W	CARBON	
	R768	QRD167J-332	3.3K	1/6W	CARBON	
	R769	QRD167J-271	270	1/6W	CARBON	
	R770	QRD167J-102	1K	1/6W	CARBON	
	R771	QRD167J-102	1K	1/6W	CARBON	
	R774	QRD167J-392	3.9K	1/6W	CARBON	
	R775	QRD167J-392	3.9K	1/6W	CARBON	
	R776	QRD167J-223	22K	1/6W	CARBON	
	R777	QRD167J-223	22K	1/6W	CARBON	
	R778	QRD167J-103	10K	1/6W	CARBON	
	R779	QRD167J-103	10K	1/6W	CARBON	
	R780	QRD167J-561	560	1/6W	CARBON	
	R781	QRD167J-561	560	1/6W	CARBON	
	R784	QRD167J-392	3.9K	1/6W	CARBON	
	R785	QRD167J-392	3.9K	1/6W	CARBON	
	R786	QRD161J-221	220	1/6W	CARBON	
	R787	QRD161J-221	220	1/6W	CARBON	
	R788	QRD167J-104	100K	1/6W	CARBON	
	R789	QRD167J-104	100K	1/6W	CARBON	
	R790	QRD167J-272	2.7K	1/6W	CARBON	
	R791	QRD167J-272	2.7K	1/6W	CARBON	
	R792	QRD167J-432	4.3K	1/6W	CARBON	
	R793	QRD167J-432	4.3K	1/6W	CARBON	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	J205	EMV7122-005	CONNECTOR(5PIN) DECK PLAY/REC	
	J451	EMN00TV-201A	2P PIN JACK(AUX INPUT)	A
	J451	EMN00TV-201A	2P PIN JACK(AUX INPUT)	B
	J451	EMN00TV-209A	2P PIN JACK(AUX INPUT)	C
	J451	EMN00TV-201A	2P PIN JACK(AUX INPUT)	D
	P601	EMV7144-015	CONNECTOR(15PIN) TO PICKUP	
	P602	EMV5109-006A	PLUG ASSY(6PIN) TO CD MECHA.	
	P603	EMV5109-005A	PLUG ASSY(5PIN) TO LAODING MECHA.	
	P701	EMV7123-025	CONNECTOR(25PIN) TO FRONT CB	
	XB51	ECX0169-344EA	RESONATOR	
	JA103	EMV7125-005R	CONNECTOR(5PIN) TO TUNER CB	
	JT601	EMV7122-103	CONNECTOR(3PIN) PART OF J601	
	JT602	EMV7122-103	CONNECTOR(3PIN) PART OF J601	
	JT851	EMV7122-004	CONNECTOR(4PIN) PART OF J851	
	JT852	EMV7122-103	CONNECTOR(3PIN) PART OF J851	A
	JT852	EMV7122-103	CONNECTOR(3PIN) PART OF J851	B
	JT852	EMV7122-103	CONNECTOR(3PIN) PART OF J851	C
	JT852	EMV7122-004	CONNECTOR(4PIN) PART OF J851	D
	JT911	EMV7122-103	CONNECTOR(3PIN) PART OF J911	
	JT912	EMV7122-103	CONNECTOR(3PIN) PART OF J911	

⚠ : SAFETY PARTS

Accessories List

⚠	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1965A	INSTRUCTION BOOK	1		J
	E30580-1966A	INSTRUCTION BOOK	1		A
	E30580-1966ABS	INSTRUCTION BOOK	1		BS
	E30580-1967A	INSTRUCTION BOOK	1		EN
	E30580-1968A	INSTRUCTION BOOK	1		C
	E30580-1968A	INSTRUCTION BOOK	1		EF
	E30580-1968A	INSTRUCTION BOOK	1		G
	E30580-1968A	INSTRUCTION BOOK	1		GI
	E30580-1969A	INSTRUCTION BOOK	1		U
	E30580-1969A	INSTRUCTION BOOK	1		UT
	E30580-1970A	INSTRUCTION BOOK	1		VX
	BT-51006-1	SAFETY REGISTRATION CARD	1		J
	BT-20025K	WARRANTY CARD	1		C
	BT20060	WARRANTY CARD	1		BS
	BT-20134	WARRANTY CARD	1		G
	BT-20122	WARRANTY CARD	1		A
	BT-20122-1	STICKER	1		A
	BT-20044G	SAFETY INSTRUCRION SHEET	1		J
	BT20071A	SERVICE CENTER LIST	1		C
	BT-20066A	EEC AGENCY	1		BS
	E35497-019	CAUTION SHEET	1	220V	U
	E35497-019	CAUTION SHEET	1	220V	UT
⚠	E04056	SIEMENS PLUG	1		U
⚠	E04056	SIEMENS PLUG	1		UT
	E306858-002	CAUTION SHEET	1		UT
	RM-SEMXS2U	WIRE-LESS REMOTE CONTROLLOR	1		
	R03BPA-2STSA	BATTERY	1		J
	R03BPA-2STSA	BATTERY	1		C
	UM-4NJ-2PSA	BATTERY	1		A
	UM-4NJ-2PSA	BATTERY	1		BS
	UM-4NJ-2PSA	BATTERY	1		EF
	UM-4NJ-2PSA	BATTERY	1		EN
	UM-4NJ-2PSA	BATTERY	1		G
	UM-4NJ-2PSA	BATTERY	1		GI
	UM-4NJ-2PSA	BATTERY	1		VX
	UM-4NJ-2PSA	BATTERY	1		U
	UM-4NJ-2PSA	BATTERY	1		UT
	EMZ2001-014	AC ADAPTOR	1		J
	EMZ2001-014	AC ADAPTOR	1		C
	EMZ2001-014	AC ADAPTOR	1		A
	EMZ2001-014	AC ADAPTOR	1		BS
	EMZ2001-014	AC ADAPTOR	1		EF
	EMZ2001-014	AC ADAPTOR	1		EN
	EMZ2001-014	AC ADAPTOR	1		GI
	EMZ2001-014	AC ADAPTOR	1		VX
	EMZ2001-014	AC ADAPTOR	1	For Service Manuals Contact	U
	EMZ2001-014	AC ADAPTOR	1	MAURITRON TECHNICAL SERVICES	UT
	E43486-340A	SAFETY SHEET	1	8 Cherry Tree Rd, Chinnor	BS
	EQB4001-015	LOOP ANTENNA	1	Oxon OX9 4QY	
	EWP502-005K	BILT-IN ANTENNA	1	Tel:- 01844-351694 Fax:- 01844-352554	J
	EWP502-005K	BILT-IN ANTENNA	1	Email:- enquiries@mauritron.co.uk	C
	EWP502-005K	BILT-IN ANTENNA	1		A
	EWP502-005K	BILT-IN ANTENNA	1		BS
	EWP502-005K	BILT-IN ANTENNA	1		EF
	EWP502-005K	BILT-IN ANTENNA	1		EN

⚠	Part Number	Part Name	Q'ty	Description	Areas
	EWP502-005K	BILT-IN ANTENNA	1		GI
	EWP502-005K	BILT-IN ANTENNA	1		VX
	EWP502-005K	BILT-IN ANTENNA	1		U
	EWP502-005K	BILT-IN ANTENNA	1		UT
	E67007-001	WIRE ANTENNA	1		G
	QPGA025-03505B	ENVELOPE	1		J
	QPGA025-03505B	ENVELOPE	1		C
	QPGA025-03505B	ENVELOPE	1		A
	QPGA025-03505B	ENVELOPE	1		BS
	QPGA025-03505B	ENVELOPE	1		EF
	QPGA025-03505B	ENVELOPE	1		EN
	QPGA025-03505B	ENVELOPE	1		G
	QPGA025-03505B	ENVELOPE	1		GI
	QPGA025-03505B	ENVELOPE	1		VX
	QPGA025-03505B	ENVELOPE	1		U
	QPGA025-03505B	ENVELOPE	1		UT

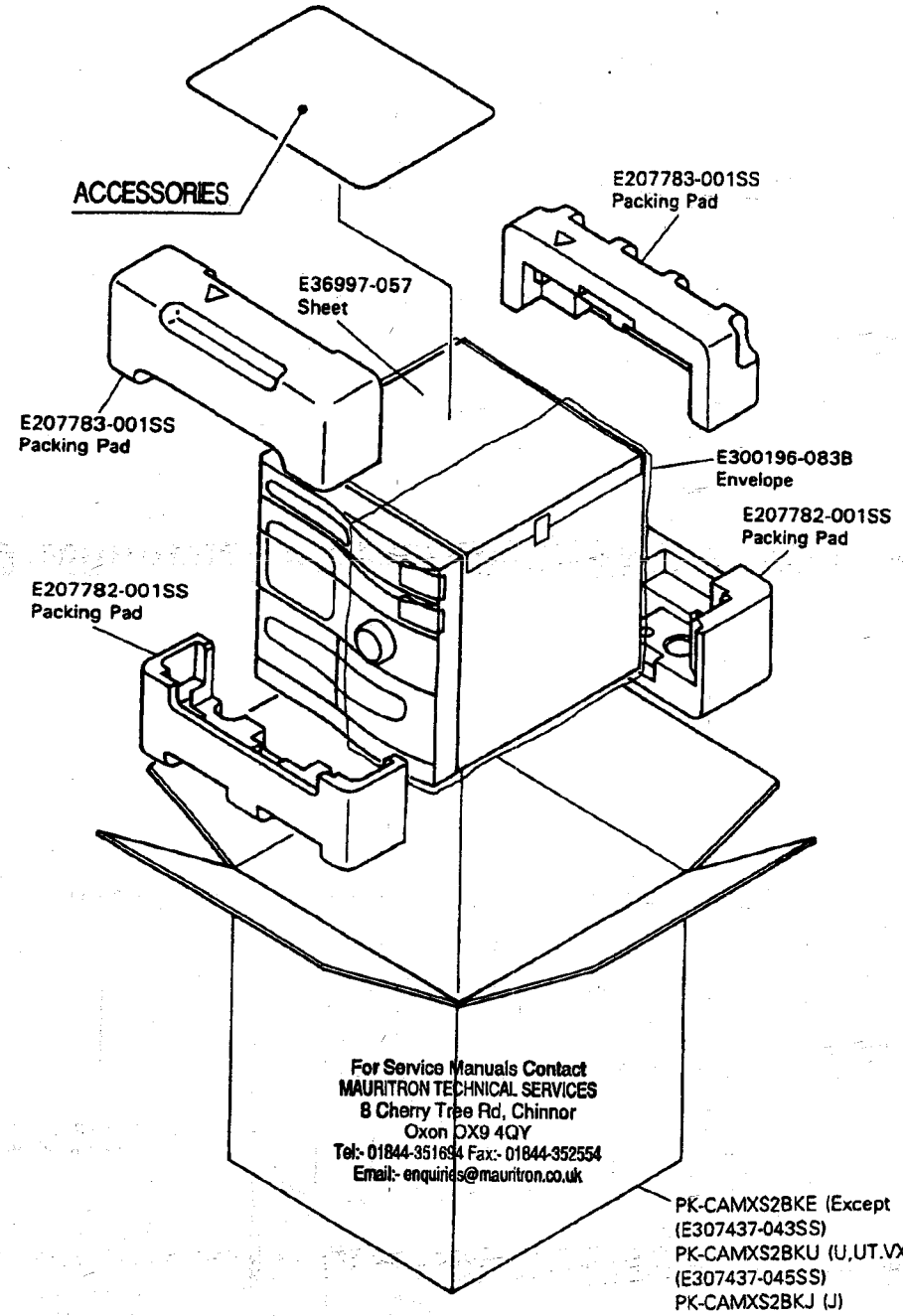
⚠ SAFETY PARTS

The Marks for Designated Areas

J	the U.S.A.	C	Canada	A	Australia	EN	Scandinavia
EF	Continental Europe	U	Universal	BS	the U.K.	G	Germany
GI	Itary	VX	East Europe	**No mark indicates all areas.**			

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

Packing Materials and Part Numbers

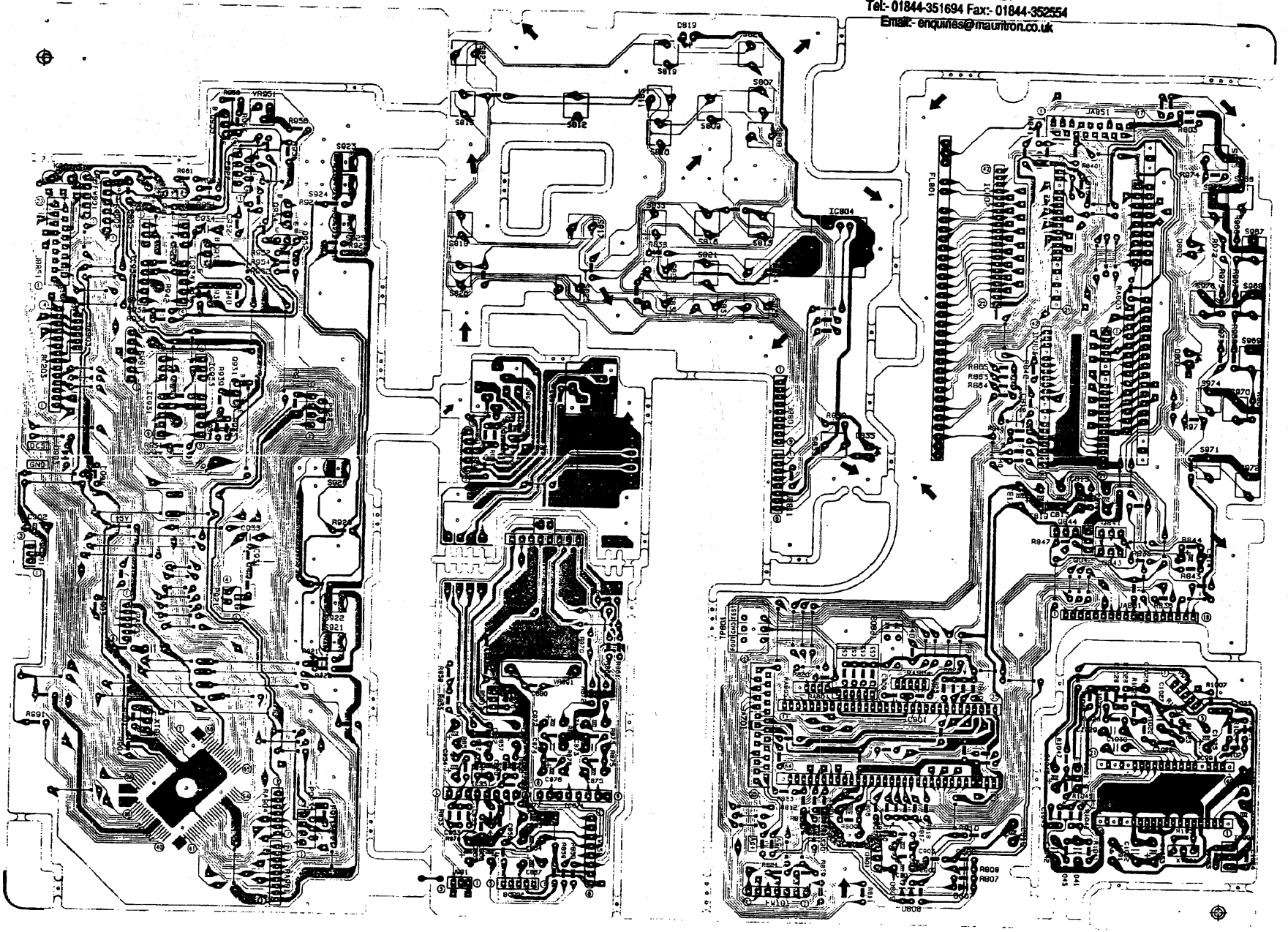


The Marks for Designated Areas			
J	the U.S.A.	C	Canada
A	Australia	EF	Scandinavia
EF ...	Continental Europe	BS	the U.K.
G	Germany	GI	Italy
VX ...	East Europe	UT	Taiwan
U	Universal Type	**No mark indicates all areas.**	

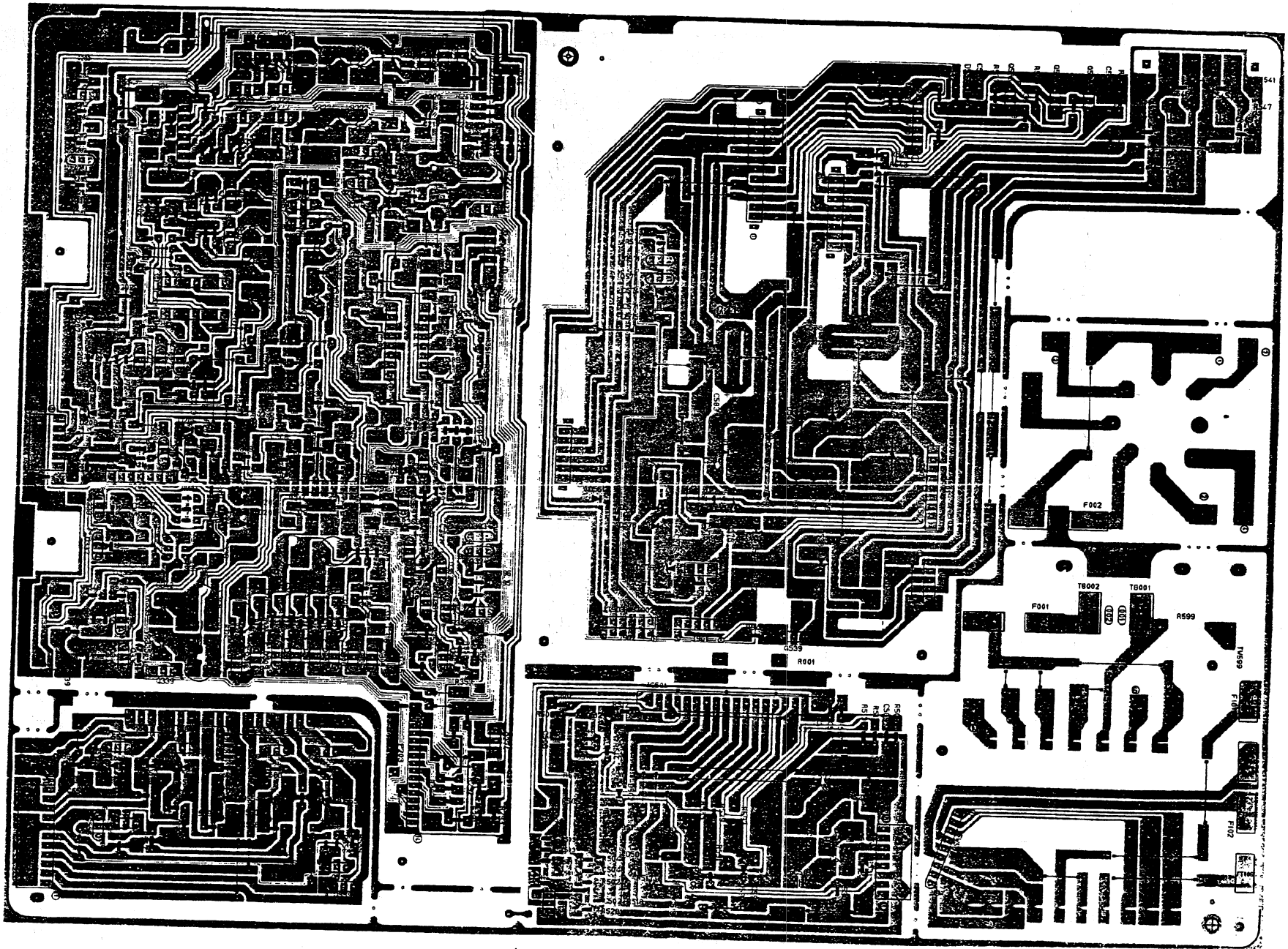
Printed Circuit Boards

(1) Front & Deck Controller CB (ENC-101)

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

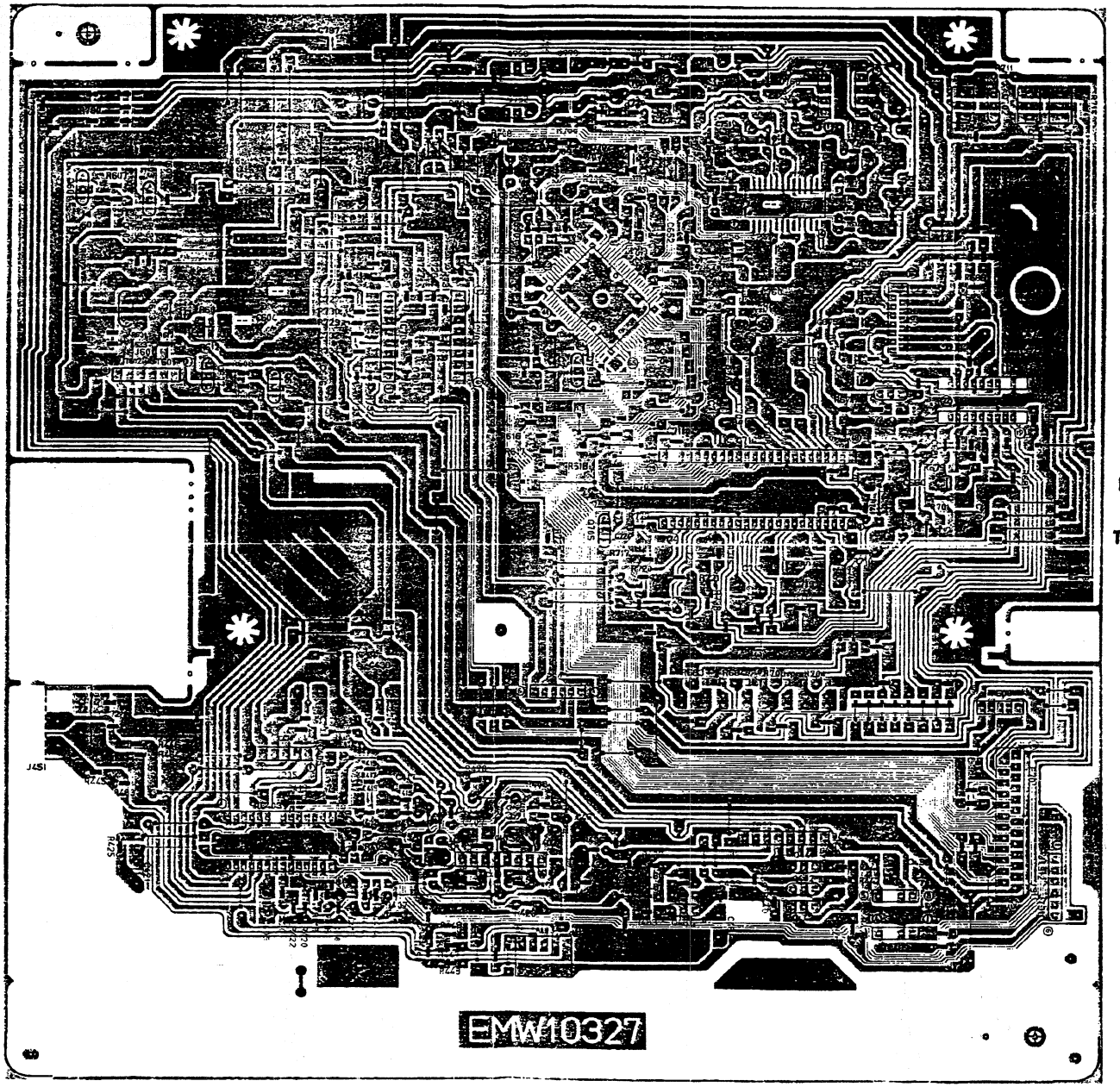


(2) Power Supply & Deck CB (ENJ-072)



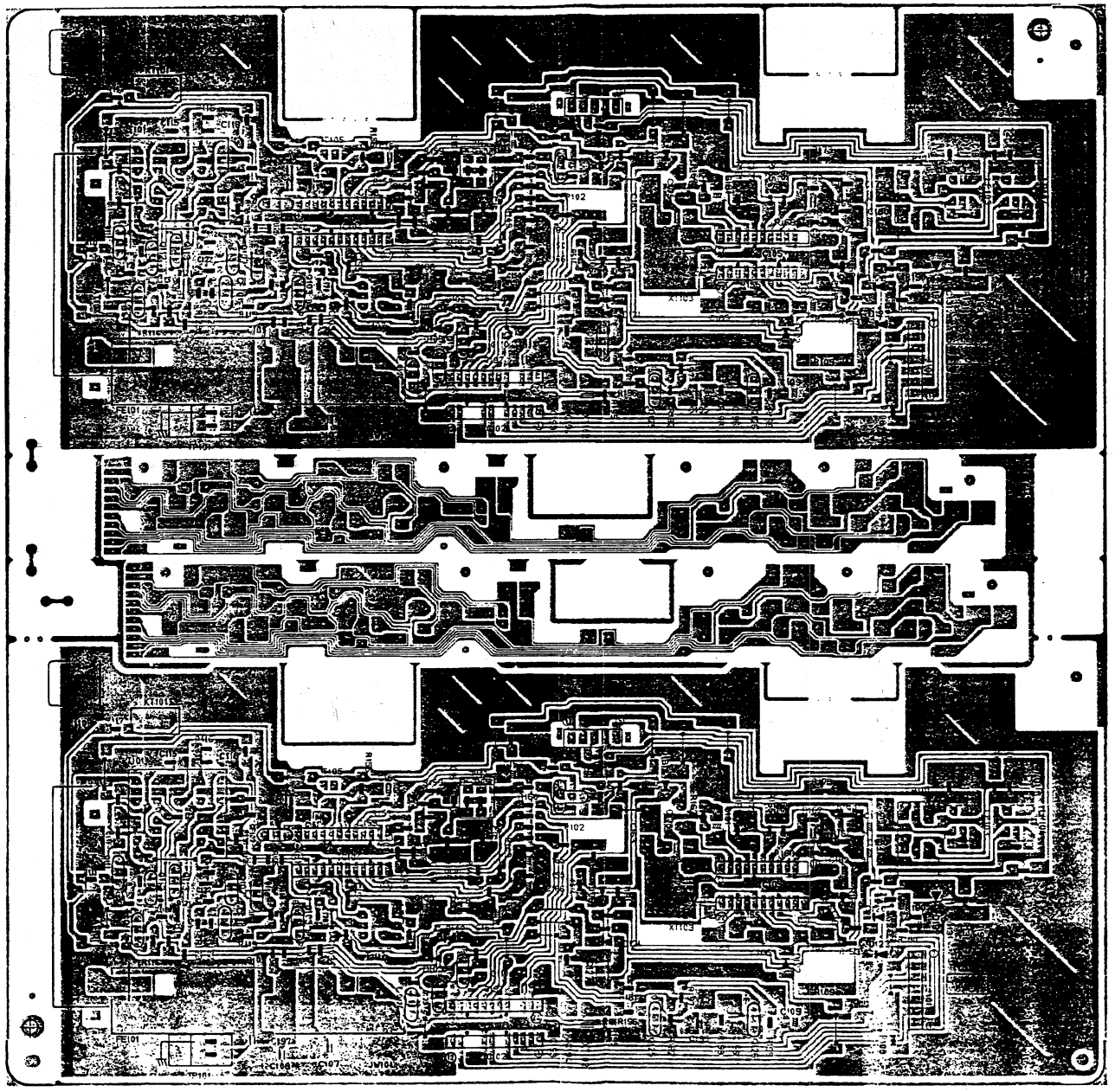
(No. 20399) (No. 20399)

(3) CD & Source Selector CB (ENN-373)



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

(4) Tuner CB (ENA-140)

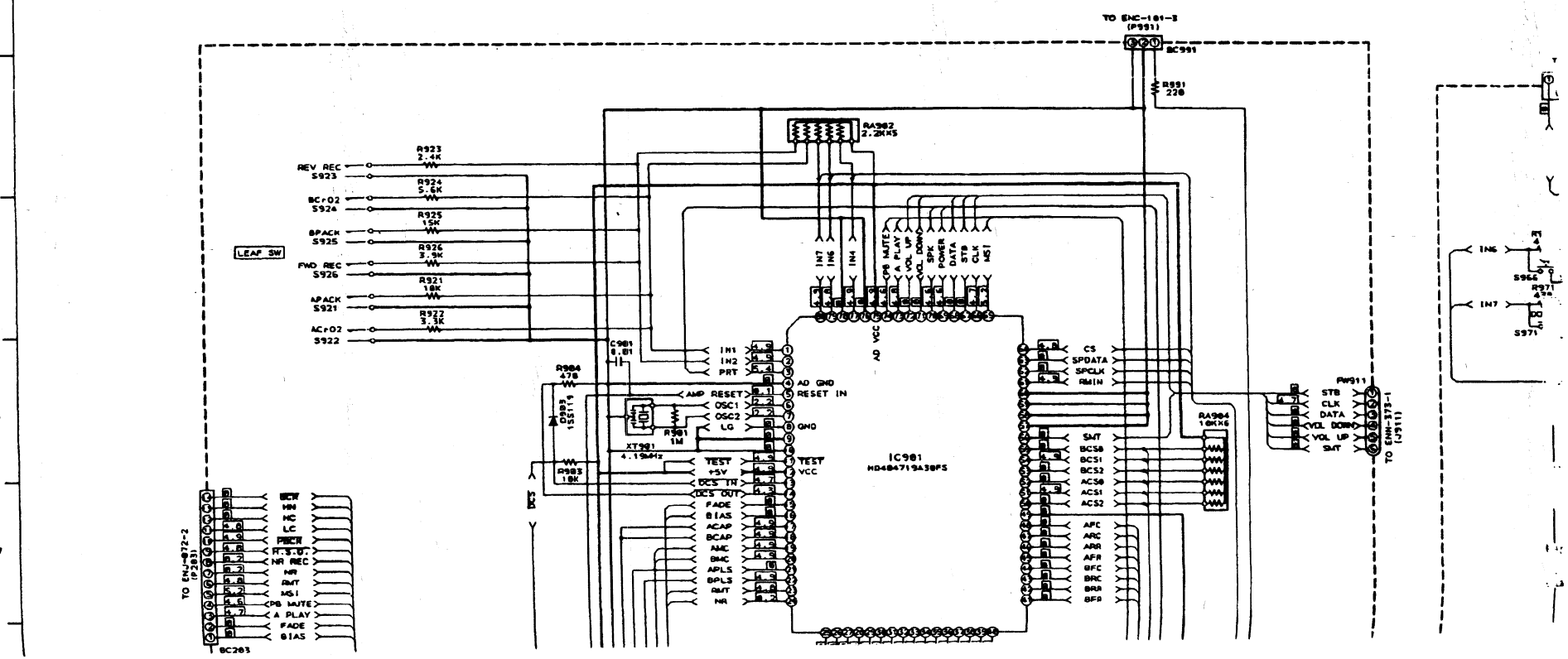


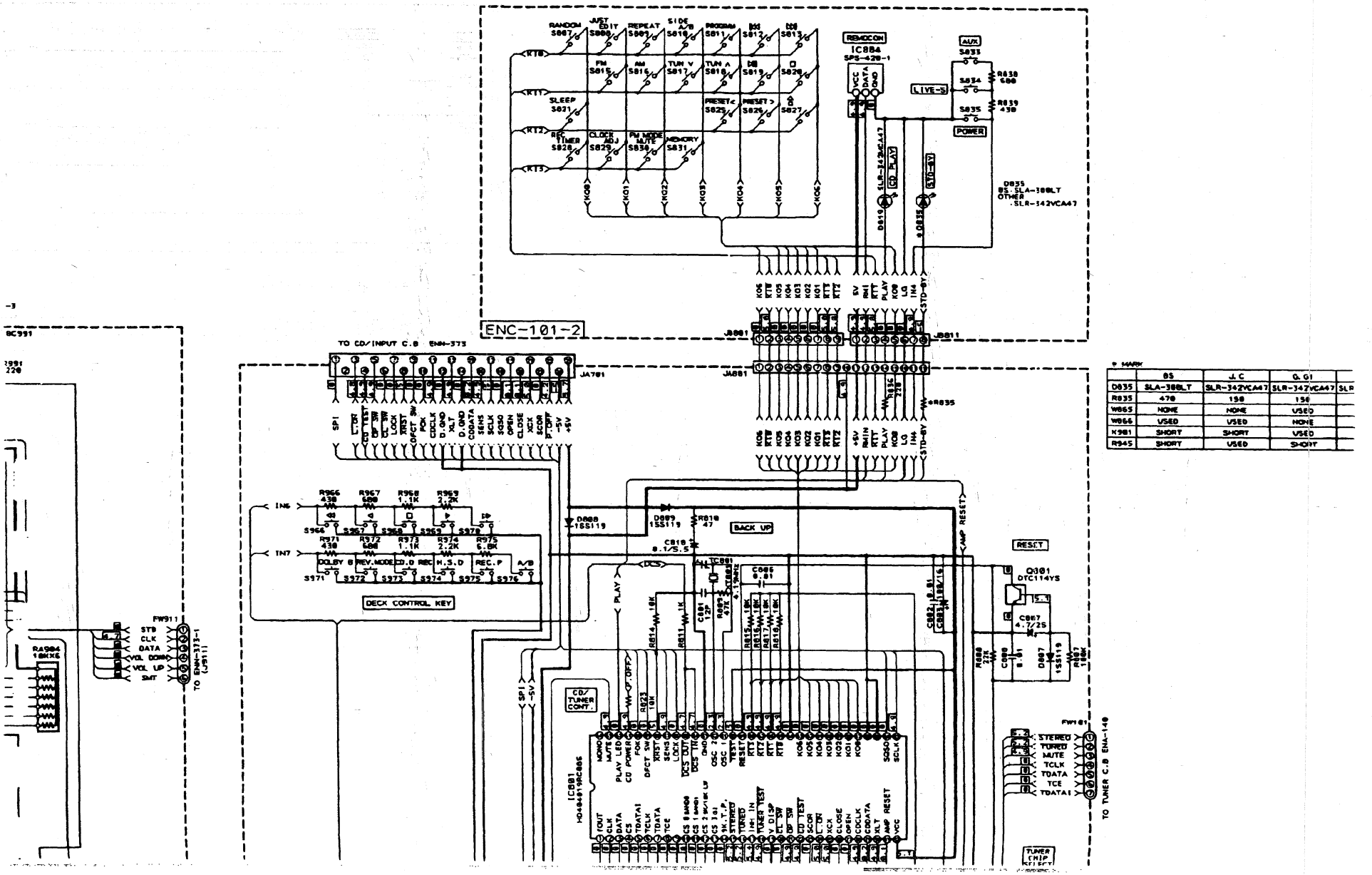
(No. 20399) (No. 20399)

Schematic Diagrams

(1) System Control Section

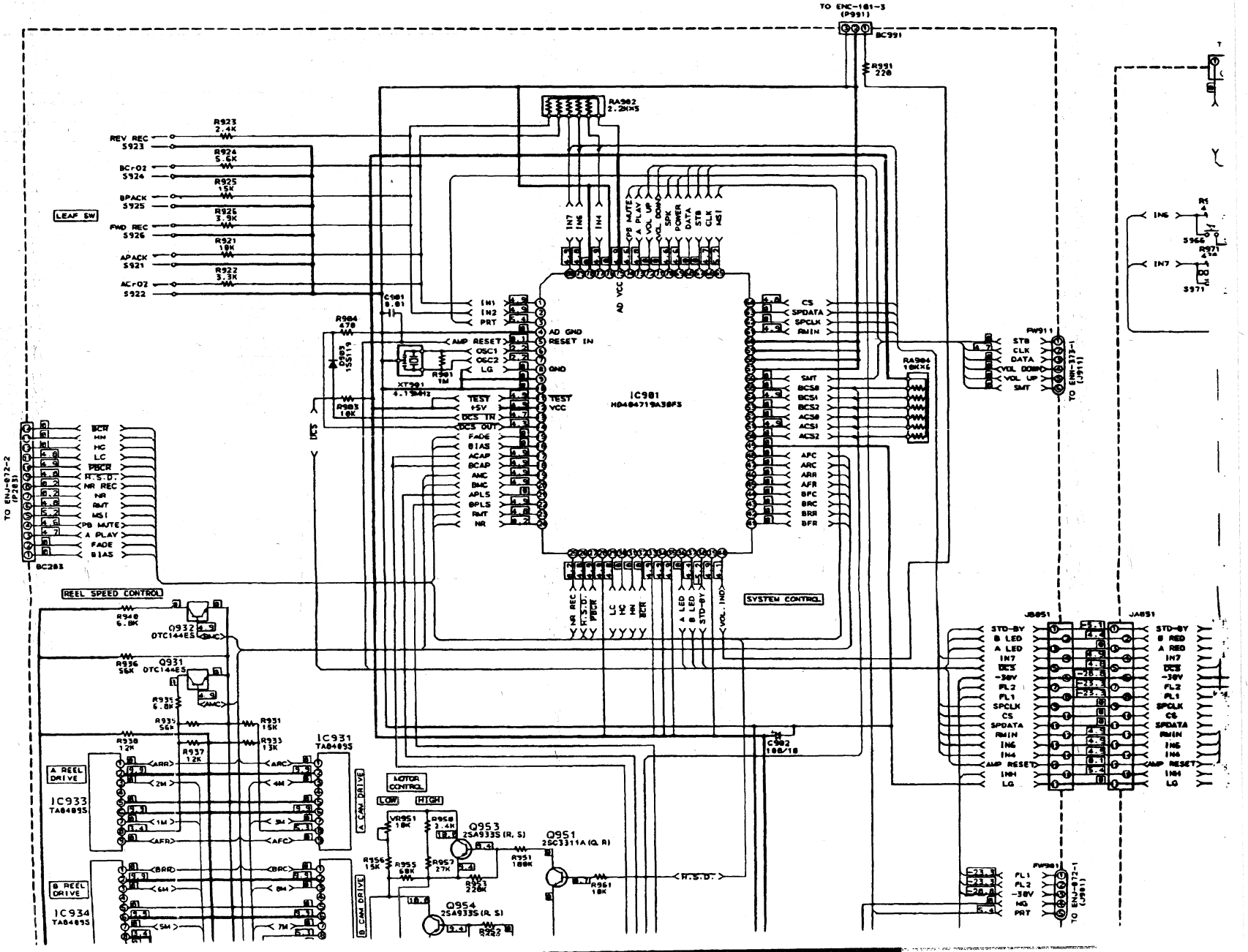
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

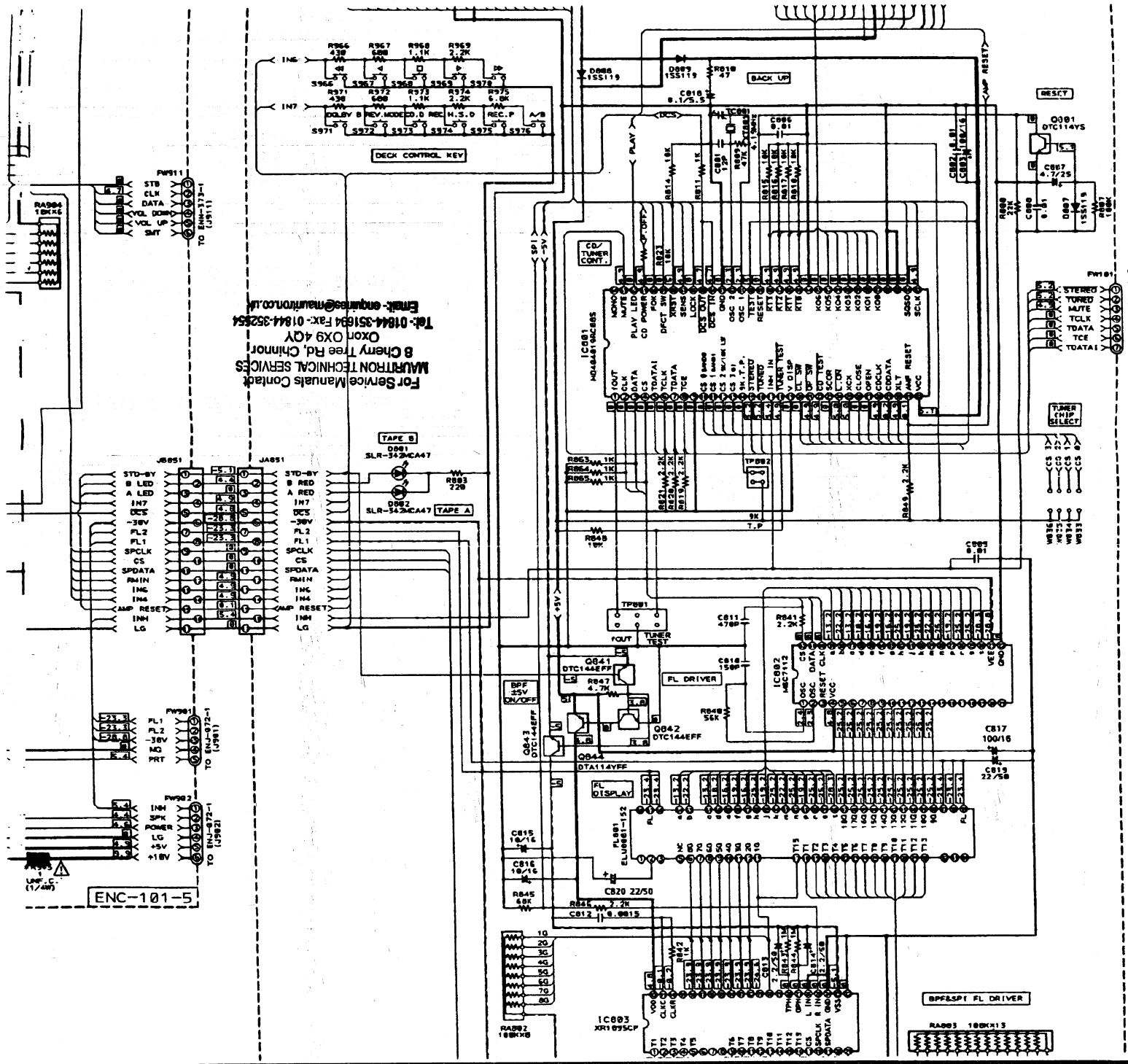




* MARK

	BS	J,C	Q,G1	
D835	SLA-38BLT	SLR-342VCA47	SLR-347VCA47	SLR
R835	470	150	150	
W865	NONE	NONE	USED	
W866	USED	USED	NONE	
K981	SHORT	SHORT	USED	
R945	SHORT	USED	SHORT	


TO ENC-101-3 (P991)
BC991
R931 220
RA902 2.2KX5
R923 2.4K
REV REC S923
R924 5.6K
BCrO2 S924
R925 15K
BPACK S925
R926 3.9K
FWD REC S926
R921 10K
APACK S921
R922 3.3K
ACrO2 S922
LEAF SW
C981 0.01
R984 470
D983 1SS119
R982 1M
XT981 6.144Hz
R983 10K
IC981 HD404719A38F5
IN1
IN2
PRT
AD GND
RESET IN
AMP RESET
OSC1
OSC2
LG
GND
TEST
+5V
VCC
DCS IN
DCS OUT
FADE
BIAS
ACAP
BCAP
AMC
BMC
APLS
BPLS
RMT
NR
CS
SPDATA
SPCLK
RMIN
SMT
BCS0
BCS1
BCS2
ACS0
ACS1
ACS2
AFC
ARC
ARR
AFR
BFC
BRC
BRR
BFR
IN7
IN6
IN4
PB MUTE
A PLAY
VOL UP
VOL DOWN
SPK POWER
DATA
STB
CLK
MSI
VCC
AD
RA903 10KX12
FW911
STB
CLK
DATA
VOL DOWN
VOL UP
SMT
TO ENH-373-1 (J911)
TO ENJ-872-2 (P285)
BC283
BCR
MN
MC
LC
PBCR
R.S.D.
NR REC
NR
RMT
MSI
PB MUTE
A PLAY
FADE
BIAS
SYSTEM CONTROL
REEL SPEED CONTROL
R940 6.8K
Q932 DTC144ES
R936 56K
Q931 DTC144ES
R935 6.8K
R934 56K
R931 15K
R938 12K
R937 12K
R933 13K
IC931 TA8489S
A REEL DRIVE
IC933 TA8489S
B REEL DRIVE
IC934 TA8489S
ARR
ARC
2M
4M
1M
3M
AFR
AFC
BRR
BRC
6M
8M
5M
7M
A CAM DRIVE
B CAM DRIVE
MOTOR CONTROL
LOW
HIGH
VR951 10K
R956 3.4K
Q953 2SA933S (R, S)
Q951 2SC3311A (Q, R)
R956 15K
R955 68K
R957 27K
R953 220K
R951 100K
R961 10K
Q954 2SA933S (R, S)
R952
R.S.D.
C982 100/16
JA851
JB851
STD-BY
B LED
A LED
IN7
DCS
-30V
FL2
FL1
SPCLK
CS
SPDATA
RMIN
IN6
IN4
AMP RESET
IN1
LG
FW981
FL1
FL2
-30V
NG
PRT
TO ENJ-872-1 (J981)
IN6
IN7
R966
R971
R970
R969
R968
R967
R966
R965
R964
R963
R962
R961
R960
R959
R958
R957
R956
R955
R954
R953
R952
R951
R950
R949
R948
R947
R946
R945
R944
R943
R942
R941
R940
R939
R938
R937
R936
R935
R934
R933
R932
R931
R930
R929
R928
R927
R926
R925
R924
R923
R922
R921
R920
R919
R918
R917
R916
R915
R914
R913
R912
R911
R910
R909
R908
R907
R906
R905
R904
R903
R902
R901
R900



TUNER CHIP SELECT

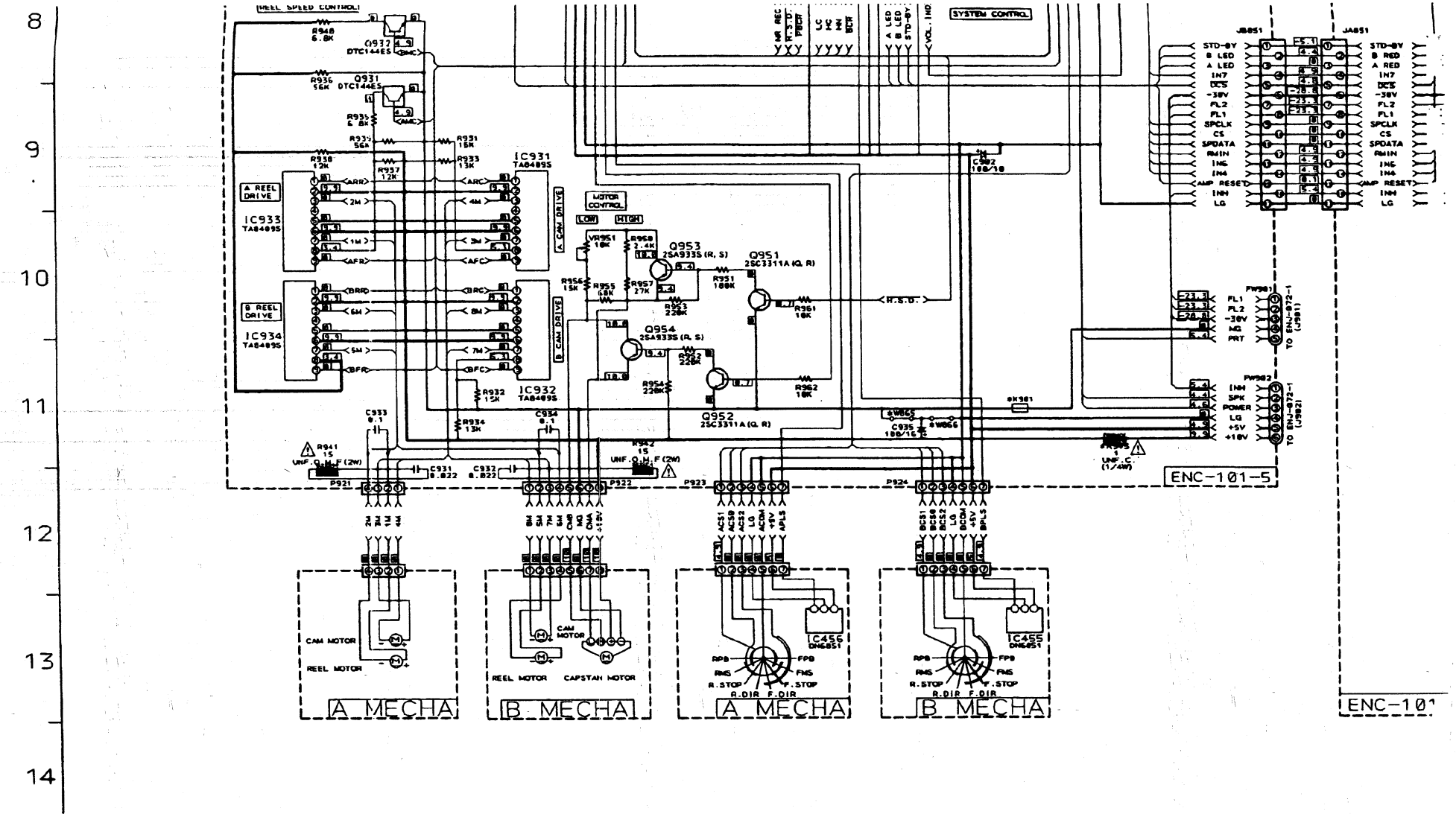
CS \ BAND	EN. EF. G. BS	A	01	VX	U. UT
CS0 W833	NONE	NONE	NONE	USED	NONE
CS1 W834	NONE	NONE	NONE	USED	USED
CS2 W835	NONE	USED	NONE	NONE	NONE
CS3 W836	NONE	NONE	USED	NONE	NONE

Notes:

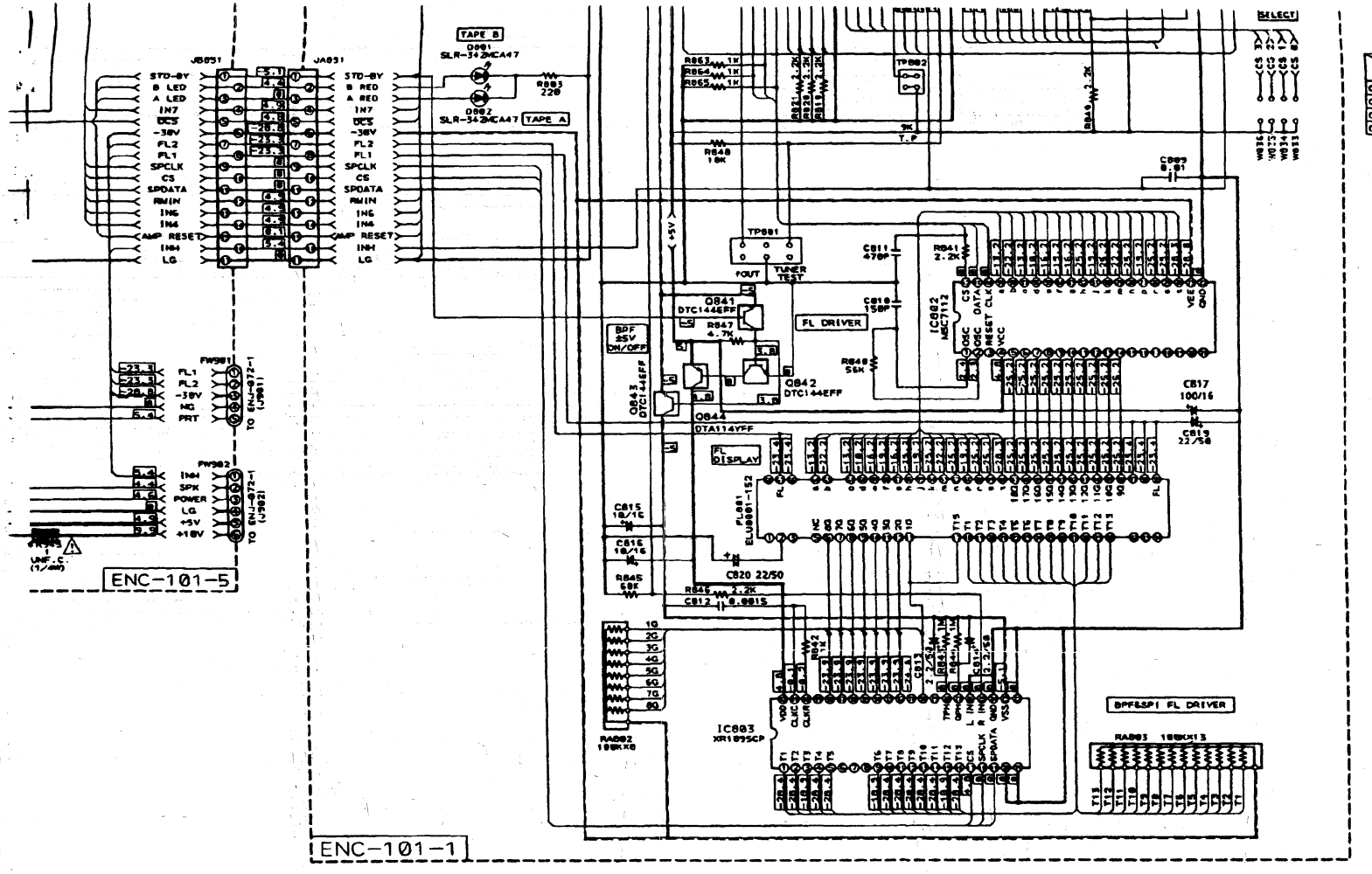
1. —— indicates +B power
2. - - - - - indicates –B power
3. ▬▬ indicates main sign
4. ■■■ indicates recording
5. When replacing the parts area (▩) and those

⚠ be sure to use the des

For Service Manuals Contact
MARTRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@martron.co.uk



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

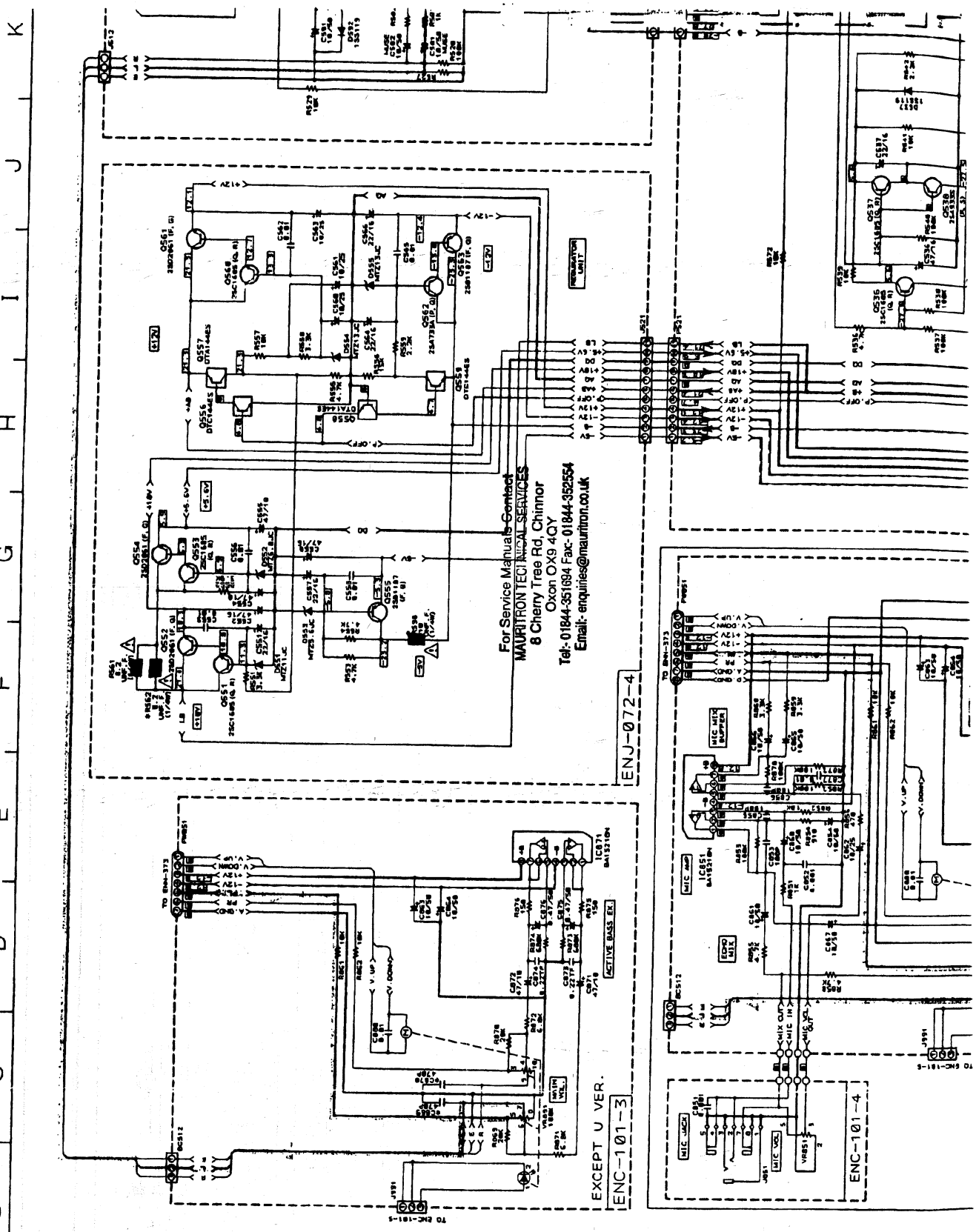


Notes:

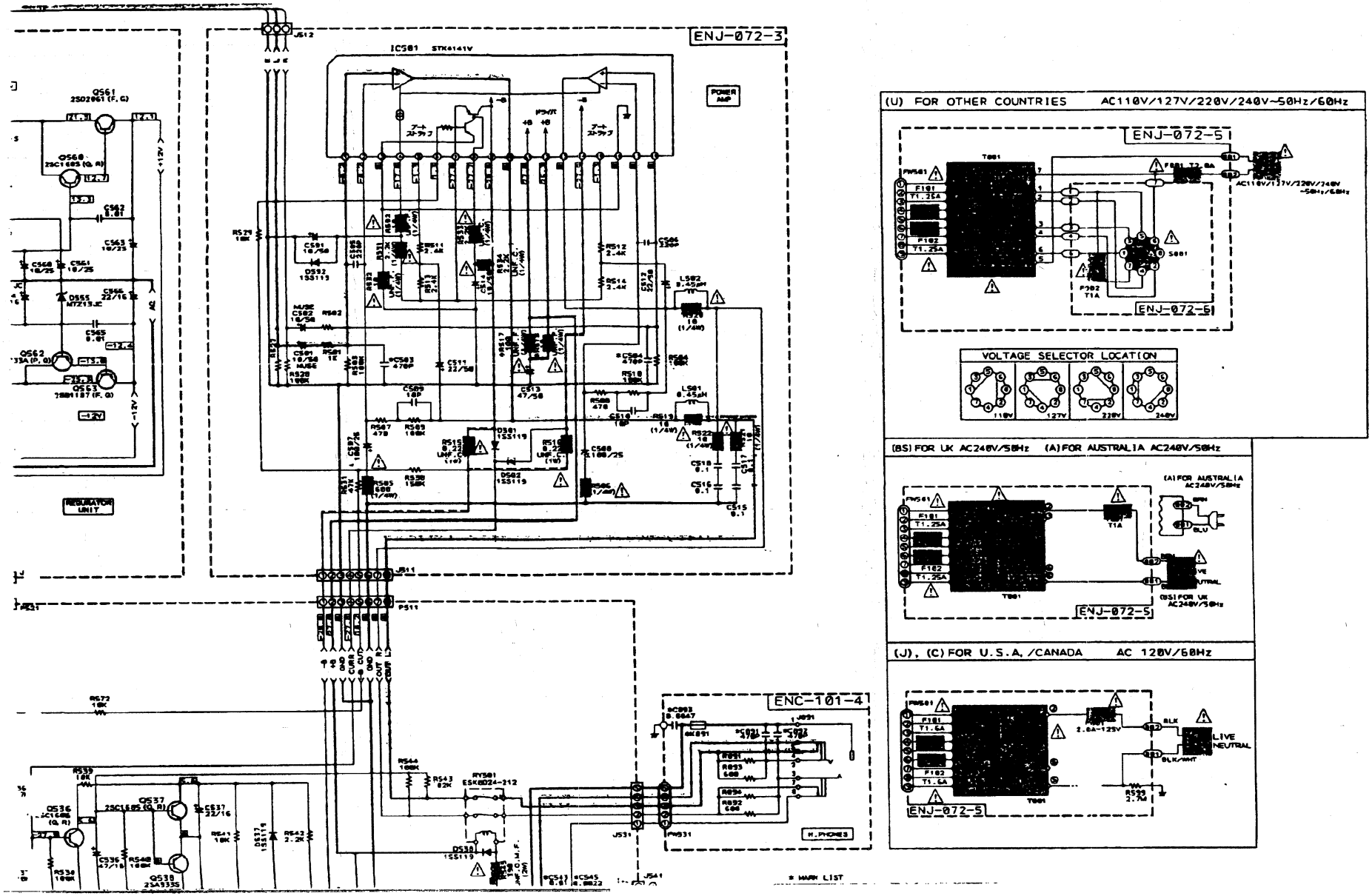
1. —— indicates +B power supply
2. ----- indicates –B power supply
3. ■■■ indicates main signal path.
4. ■■■ indicates recording signal p
5. When replacing the parts in the area (■■■) and those marke △, be sure to use the designated ensure safety.
   This is the standard circuit diagram.
6. The design and contents are su change without notice.

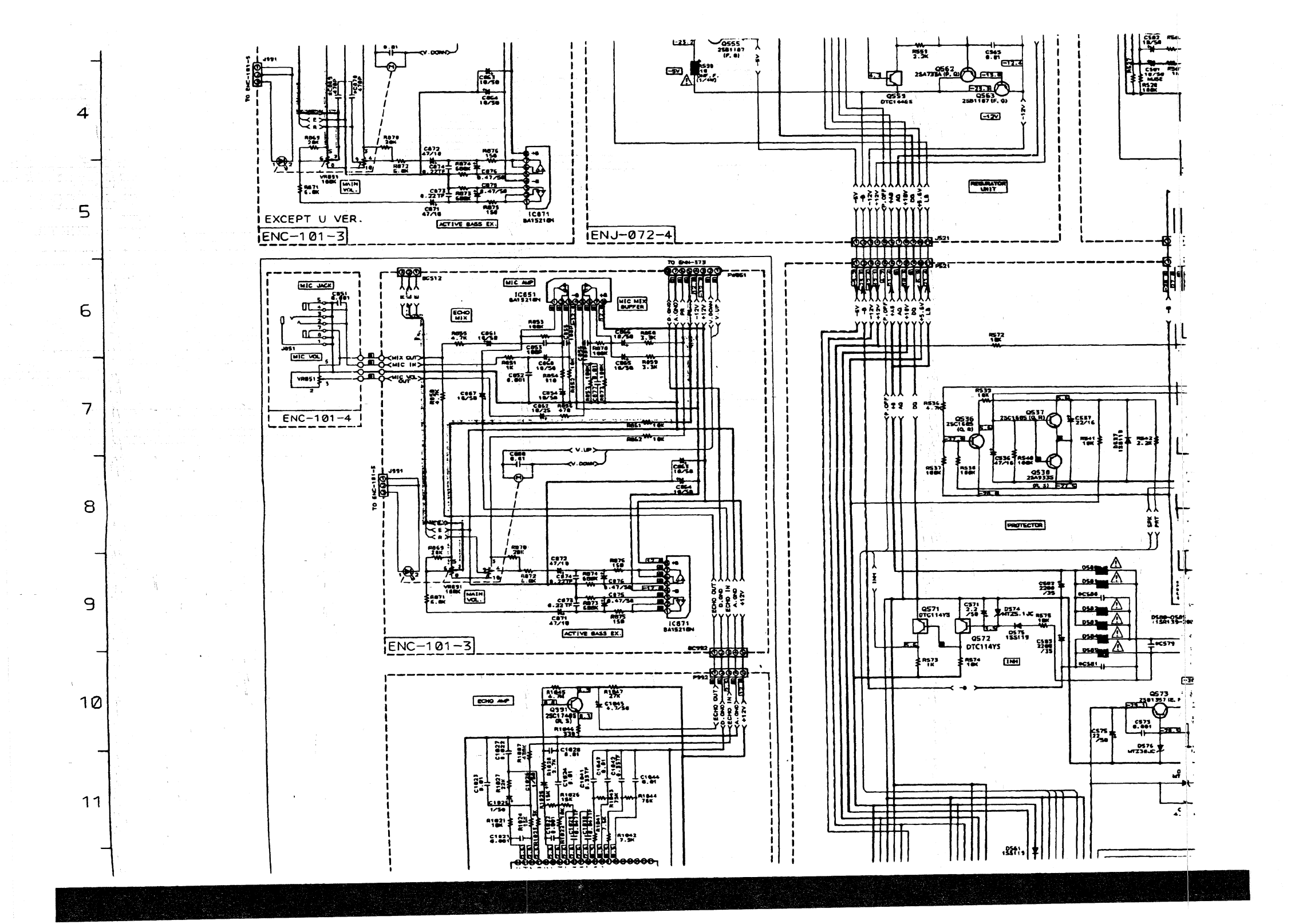
(No.

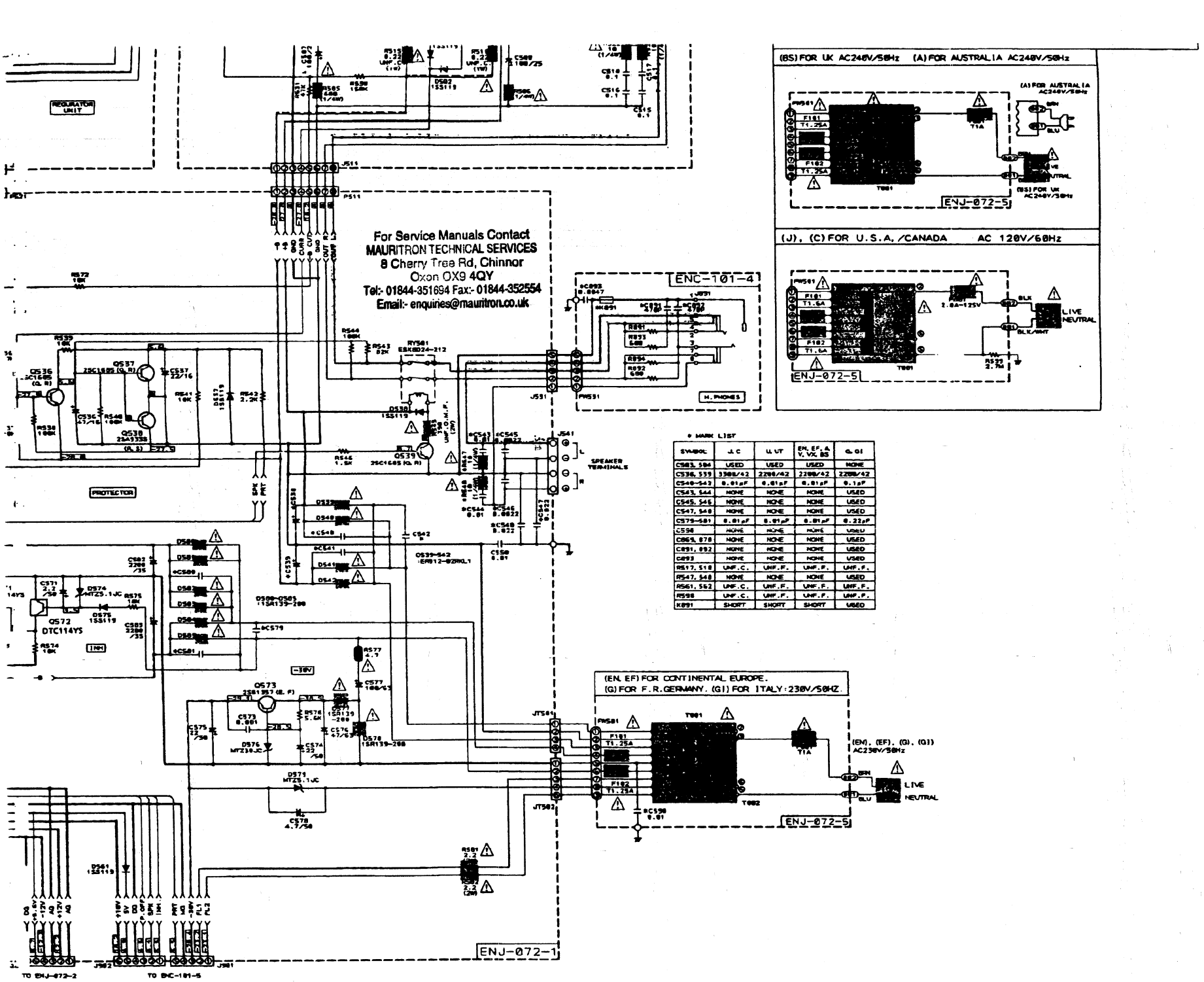
(2) Power Supply & Audio Section



I J K L M N O P Q R S

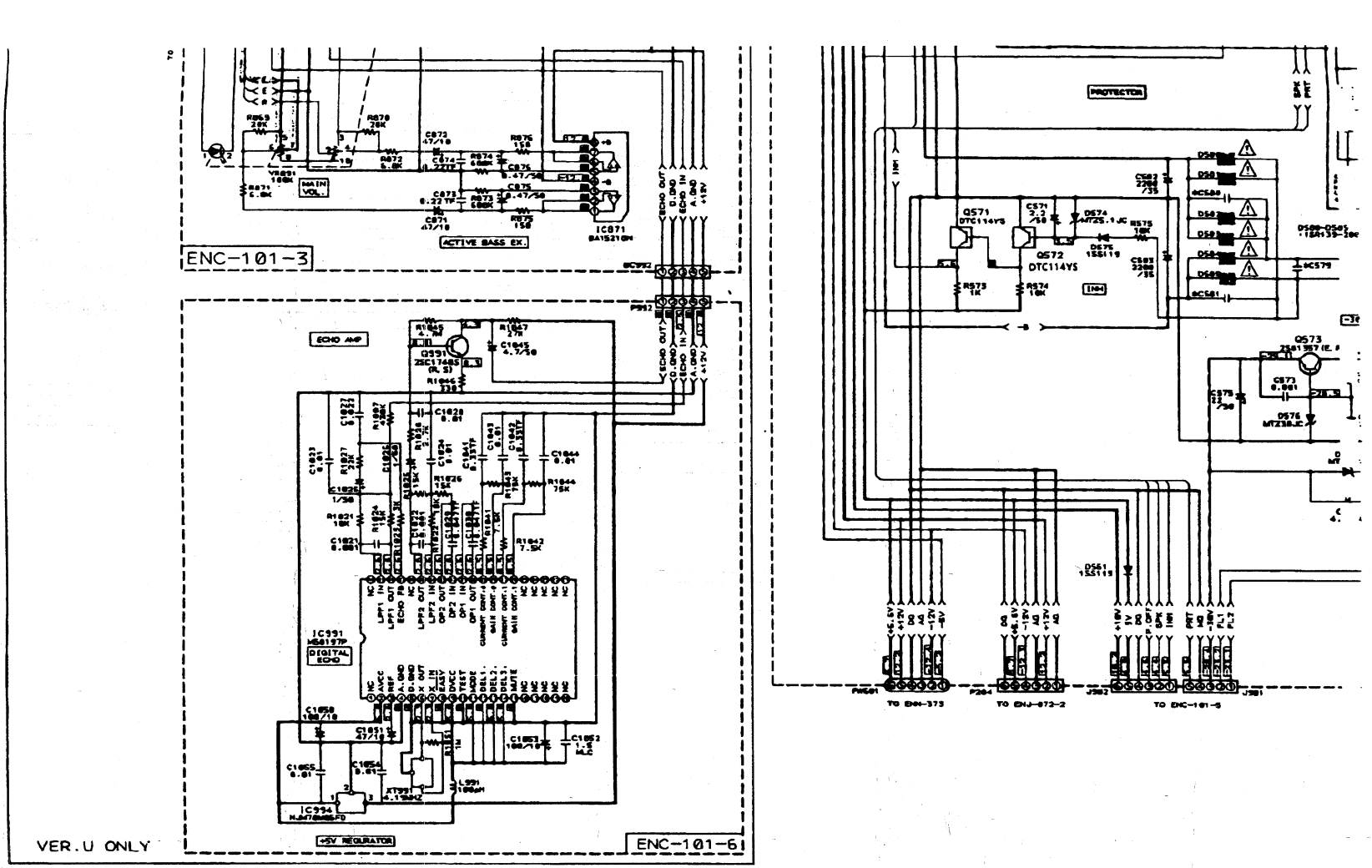



EXCEPT U VER.
ENC-101-3
ENJ-072-4
ENC-101-4
ENC-101-3
MIC JACK
MIC VOL
MIC AMP
ECHO MIX
MIC MIX BUFFER
ACTIVE BASS EX.
ECHO AMP
PROTECTOR
REGULATOR UNIT
TO ENH-373
TO ENC-101-5
IC871 BA15218N
IC651 BA15218N
Q555 2SB1187 (F, G)
Q562 2SA733A (P, Q)
Q563 2SB1187 (F, G)
Q559 DTC144ES
Q571 DTC114YS
Q572 DTC114YS
Q573 2SB1357 (E, F)
Q575 1SS119
Q576 1SS119
Q537 2SC1685 (L, M)
Q538 2SA933S
Q539 2SC1685 (L, M)
Q931 2SC1740S (R, S)
D574 MTZS5.1JC
D576 MTZ36JC
-12V
+12V
+5V
-5V
V.UP
V.DOWN
MIX OUT
MIC IN
MIC VOL OUT
ECHO OUT
ECHO IN
A. GND
INH



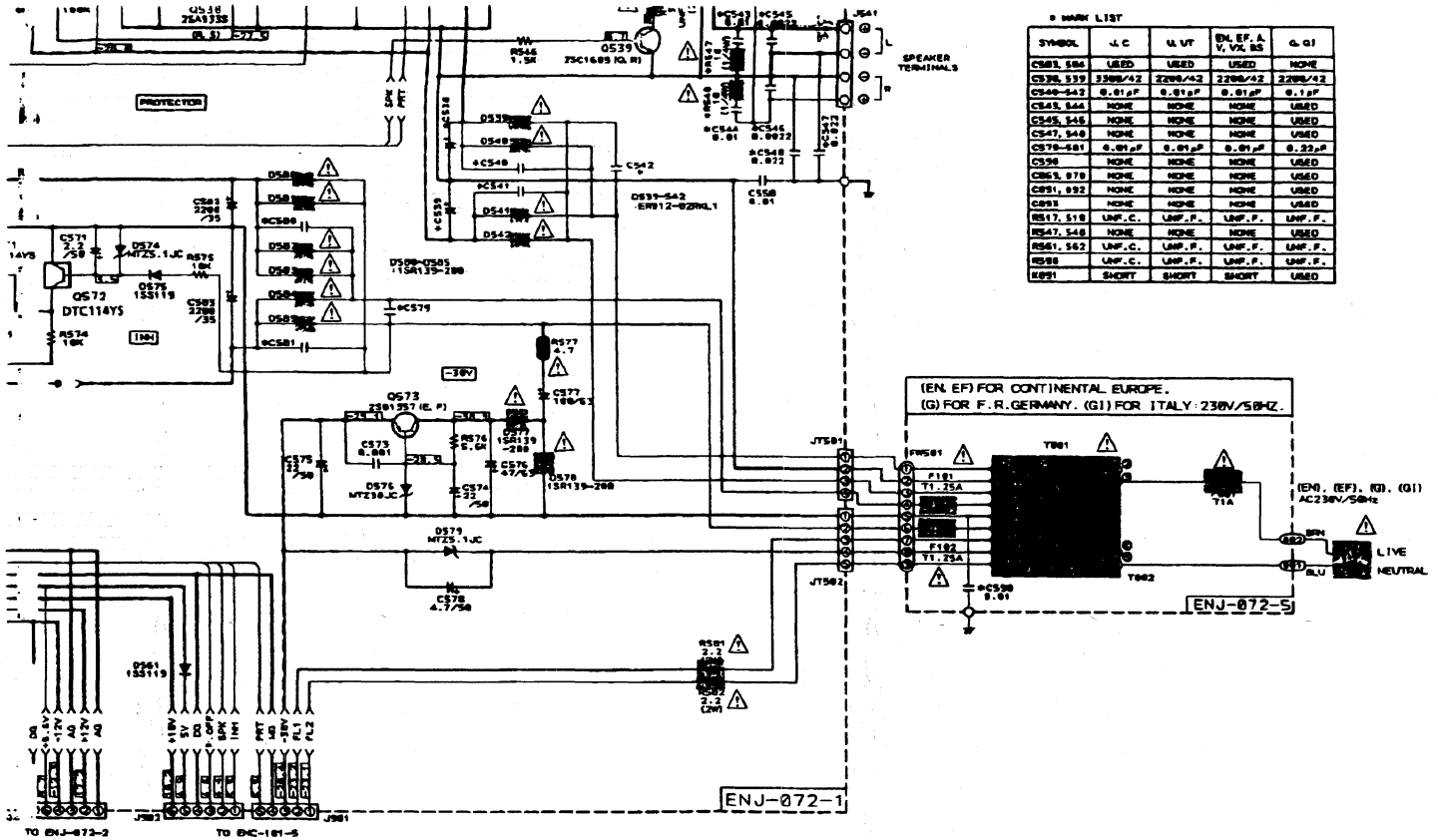
* MARK LIST

SYMBOL	J, C	U, VT	EN, EF, A, V, VK, BS	G, GI
C583, 584	USED	USED	USED	NONE
C536, 539	3300/42	2200/42	2200/42	2200/42
C540~542	0.01μF	0.01μF	0.01μF	0.1μF
C543, 544	NONE	NONE	NONE	USED
C545, 546	NONE	NONE	NONE	USED
C547, 548	NONE	NONE	NONE	USED
C579~581	0.01μF	0.01μF	0.01μF	0.22μF
C596	NONE	NONE	NONE	USED
C865, 878	NONE	NONE	NONE	USED
C891, 892	NONE	NONE	NONE	USED
C893	NONE	NONE	NONE	USED
R517, 518	UNF.C.	UNF.F.	UNF.F.	UNF.F.
R547, 548	NONE	NONE	NONE	USED
R561, 562	UNF.C.	UNF.F.	UNF.F.	UNF.F.
R598	UNF.C.	UNF.F.	UNF.F.	UNF.F.
K891	SHORT	SHORT	SHORT	USED



(No. 20399)

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

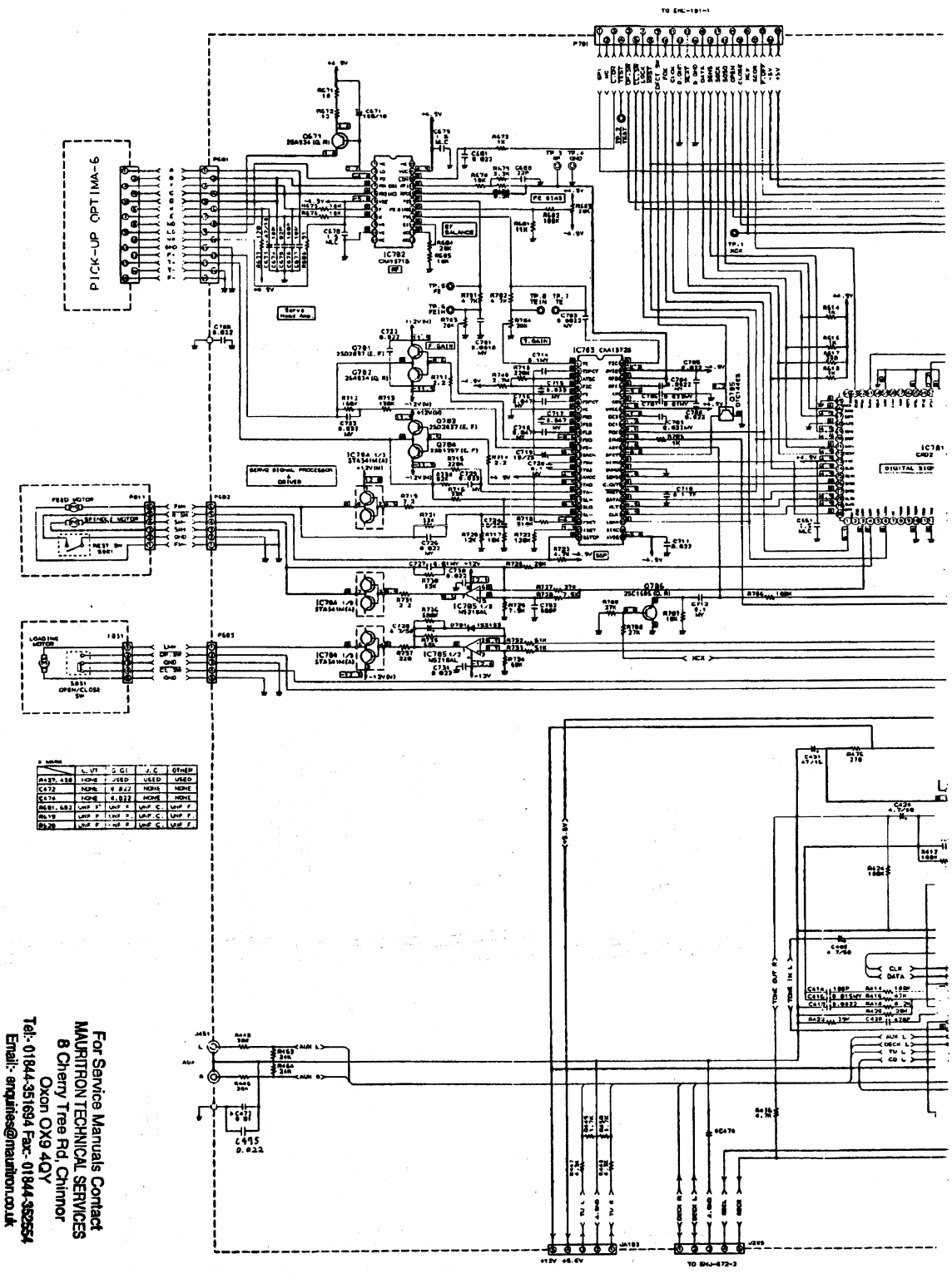


* MARK LIST

SYMBOL	U.C	U.UT	EN, EF, A V, VK, BS	G, GI
C583, 584	USED	USED	USED	NONE
C536, 539	3300/42	2200/42	2200/42	2200/42
C540~542	0.01μF	0.01μF	0.01μF	0.1μF
C543, 544	NONE	NONE	NONE	USED
C545, 546	NONE	NONE	NONE	USED
C547, 548	NONE	NONE	NONE	USED
C578~581	0.01μF	0.01μF	0.01μF	0.22μF
C558	NONE	NONE	NONE	USED
C863, 878	NONE	NONE	NONE	USED
C891, 892	NONE	NONE	NONE	USED
C893	NONE	NONE	NONE	USED
R517, 518	UNF.C.	UNF.F.	UNF.F.	UNF.F.
R547, 548	NONE	NONE	NONE	USED
R561, 562	UNF.C.	UNF.F.	UNF.F.	UNF.F.
R588	UNF.C.	UNF.F.	UNF.F.	UNF.F.
K891	SHORT	SHORT	SHORT	USED

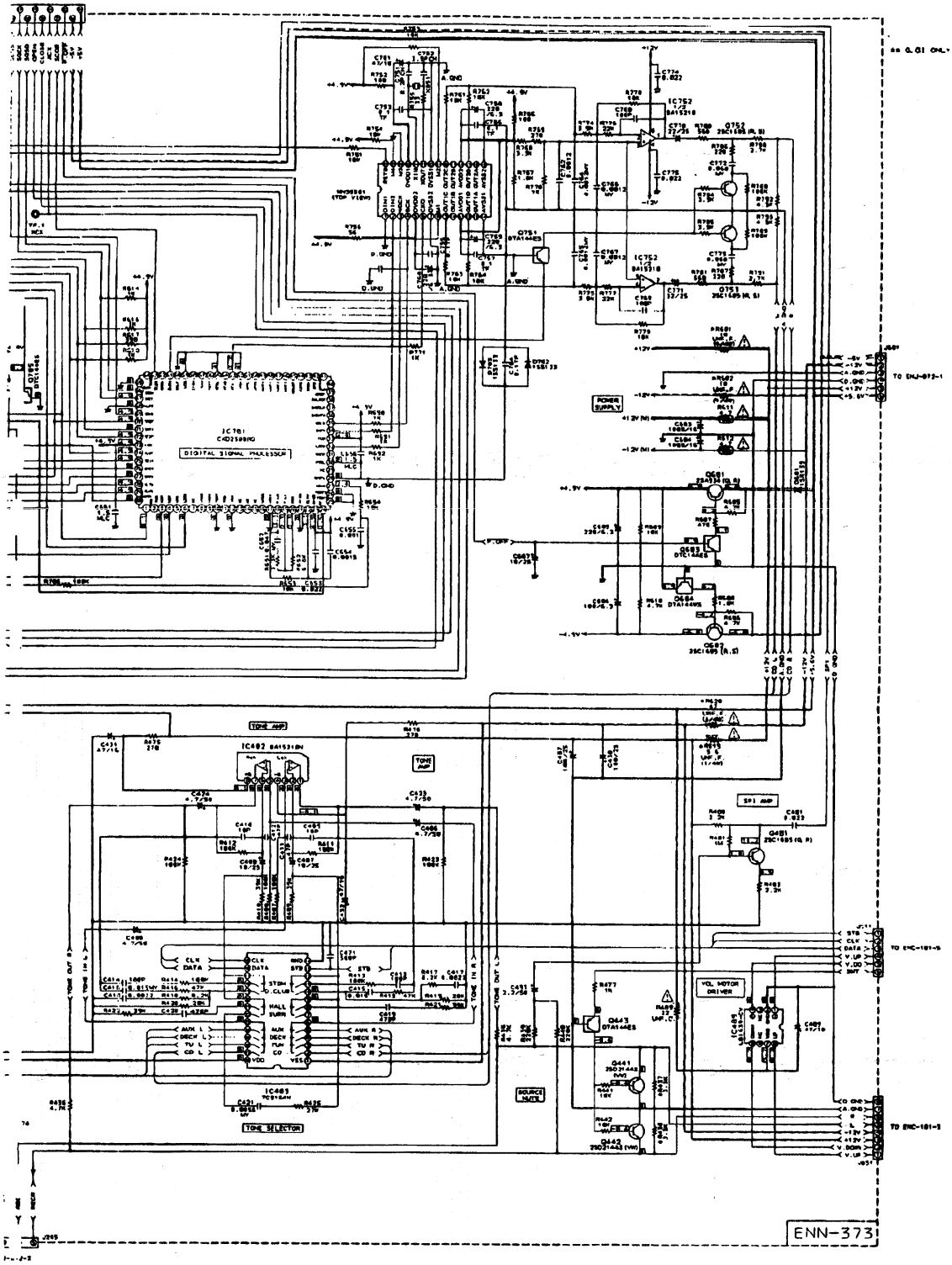
(3) CD & Source Selector Section

A B C D E F G H I J



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

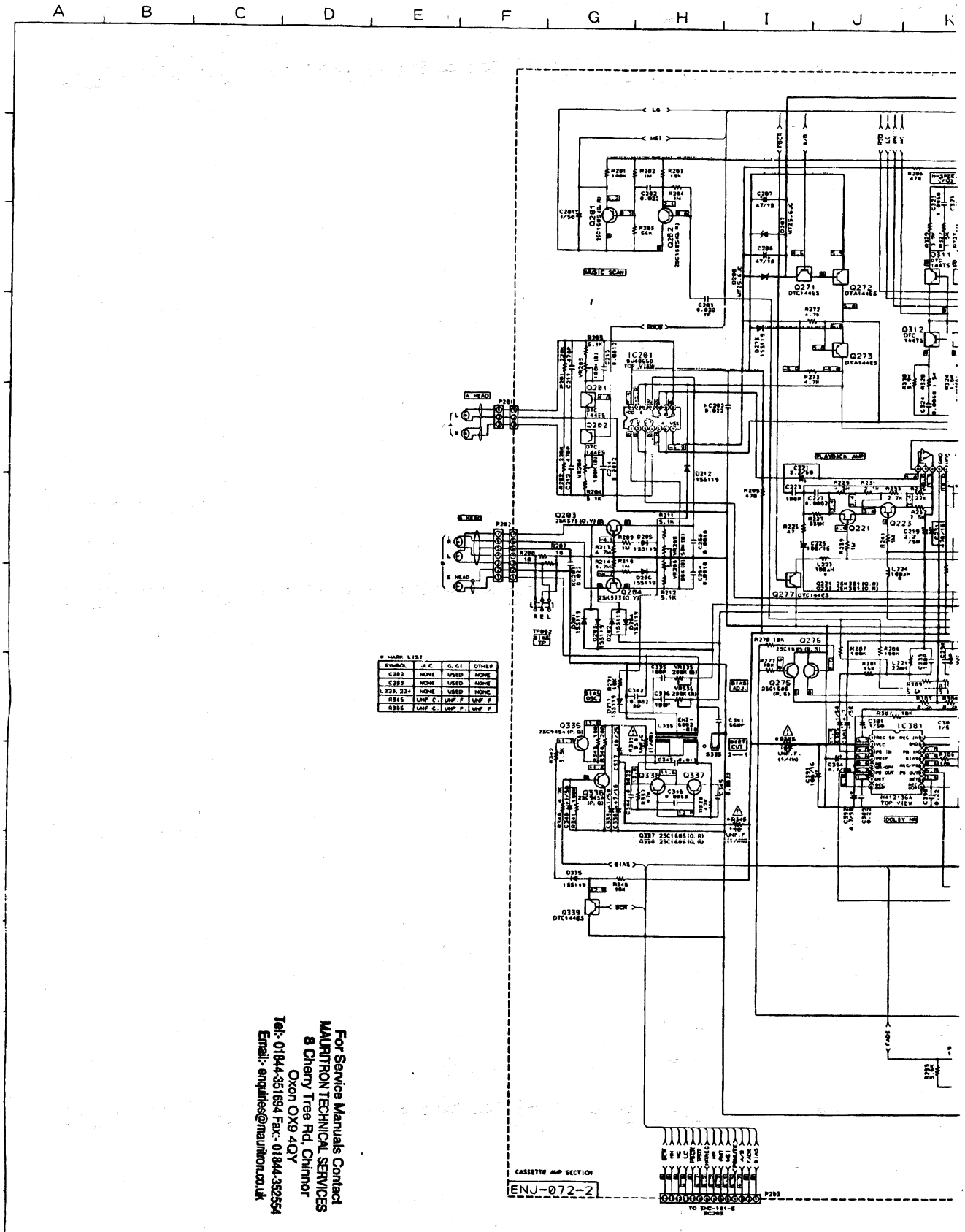
I J K L M N O P Q R S



(No

(4) Cassette Deck Section

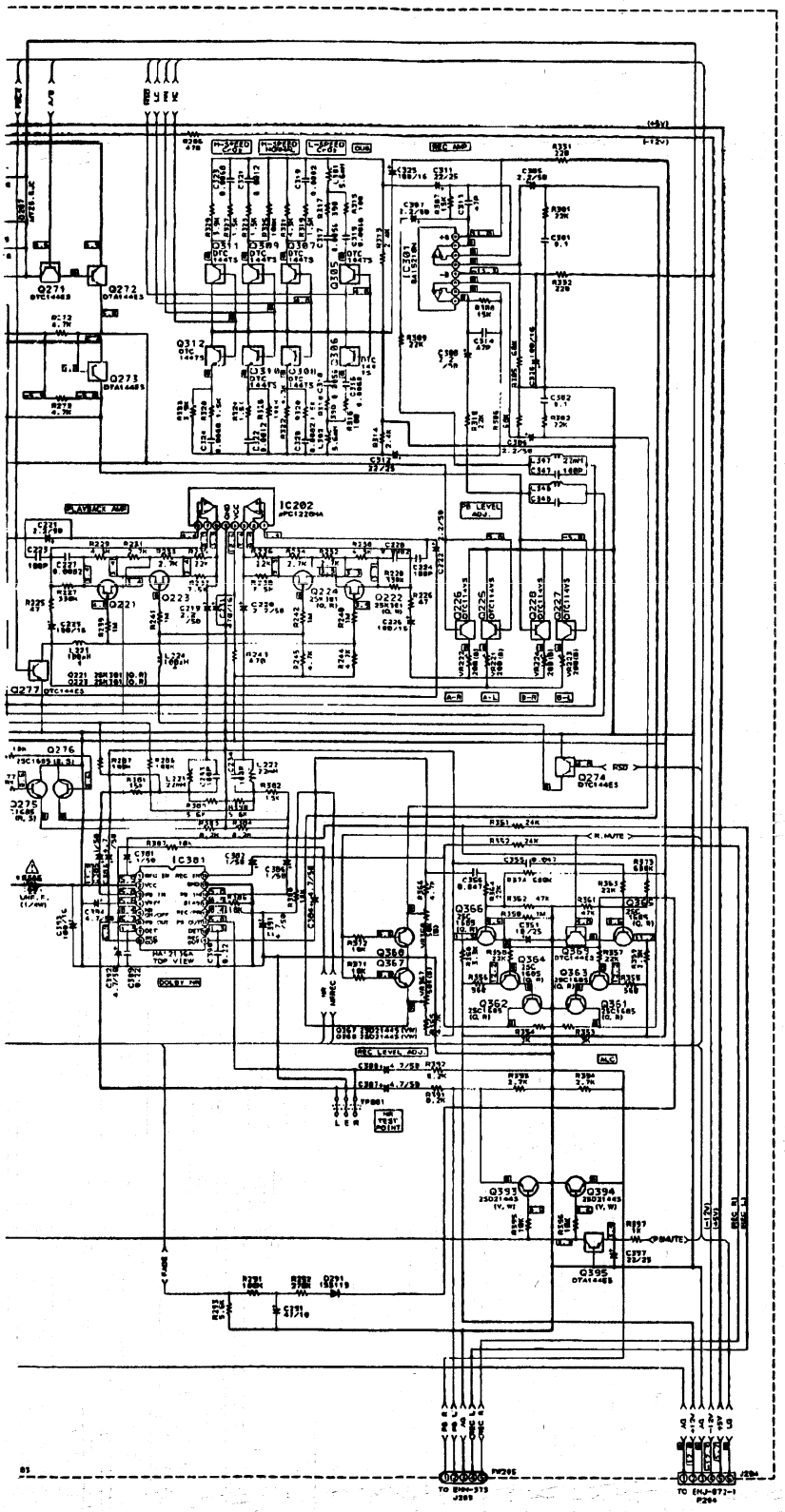
(4) Cassette Deck Se



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

(4) Cassette Deck Section

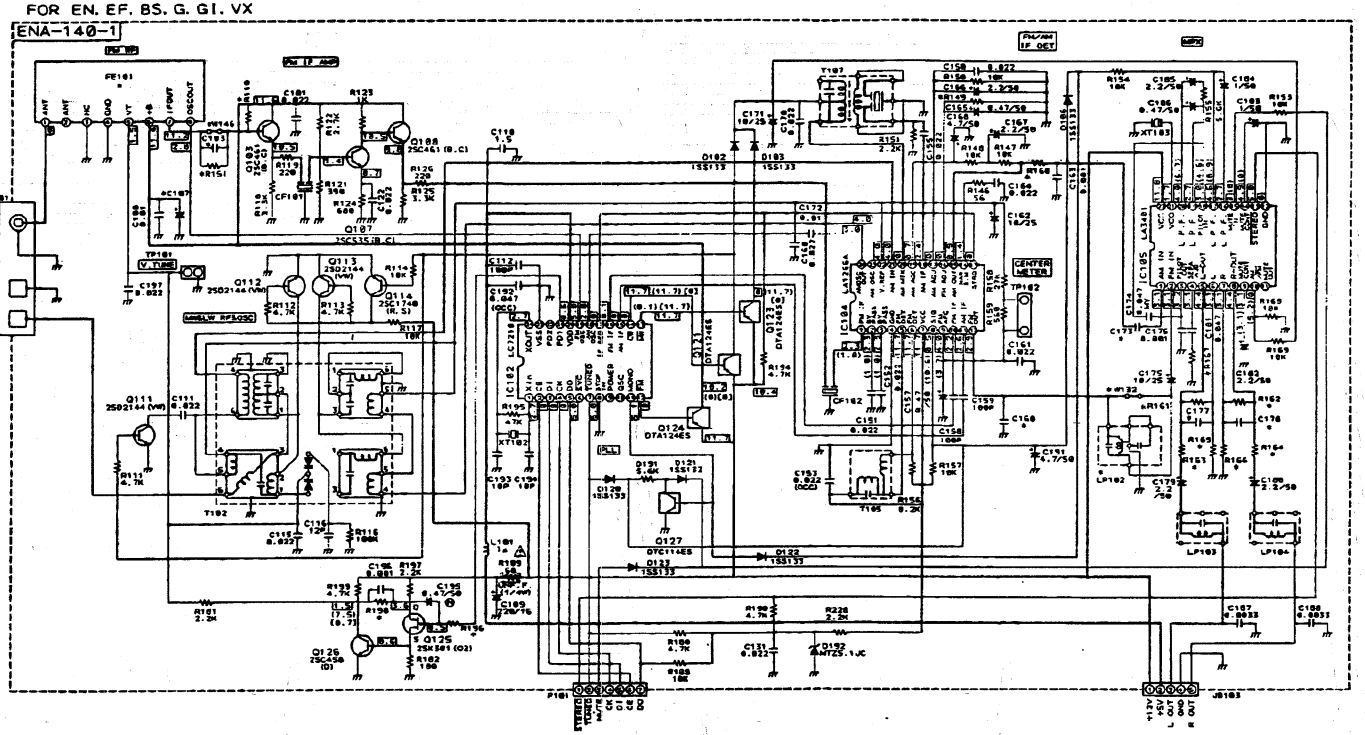
J K L M N O P Q R S



(5) Tuner Section (with LW)

FOR EN. EF. BS. G. GI. VX

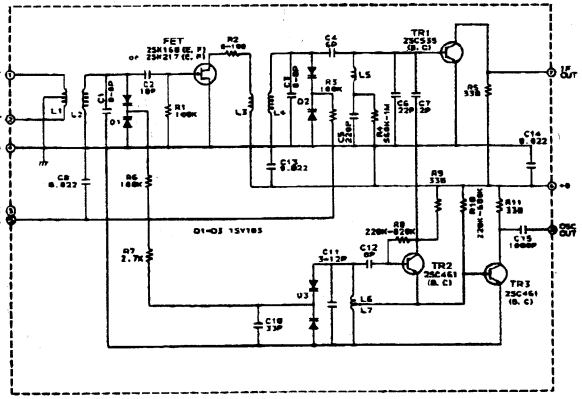
ENA-140-1



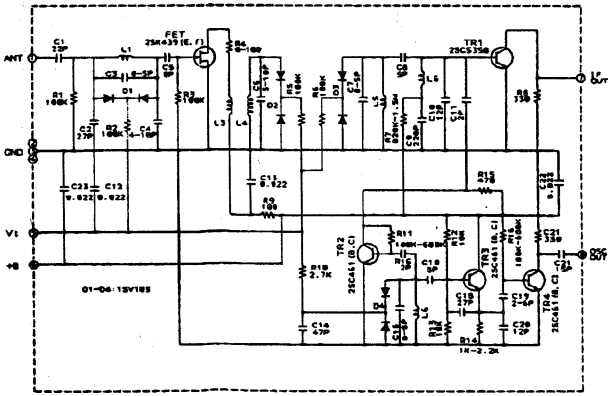
	EN, EF	G, GI	BS	VX
R168	1MK	1MK	1K	1MK
R161, 162	100K	100K	68K	100K
R163, 164	3.3K	3.3K	3.3K	3.3K
R165, 166	27RK	27RK	27RK	27RK
R167	47K	47K	47K	47K
R196	2.2K	2.2K	2.2K	2.2K
R198	8.2K	8.2K	8.2K	8.2K
C168	100P	220P	100P	100P
C173	0.022	0.022	0.022	0.022
C177, 178	560P	560P	820P	560P
FE101	EAF2203-001	EAF2203-003	EAF2203-001	EAF2302-001
LP102	NONE	USED	NONE	NONE
WT32	USED	NONE	USED	USED
R149	27K	27K	27K	15K
R118	NONE	NONE	NONE	47K
C183	NONE	NONE	NONE	0.01
WT46	USED	NONE	USED	NONE
C187	NONE	22/16	NONE	NONE
R151	NONE	100	NONE	NONE

□ FM AUTO NO SIGNAL
[ ] MW NO SIGNAL
( ) LW NO SIGNAL

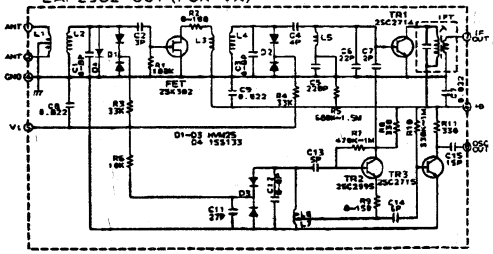
FE101
EAF2203-001 (FOR EN. EF. BS)



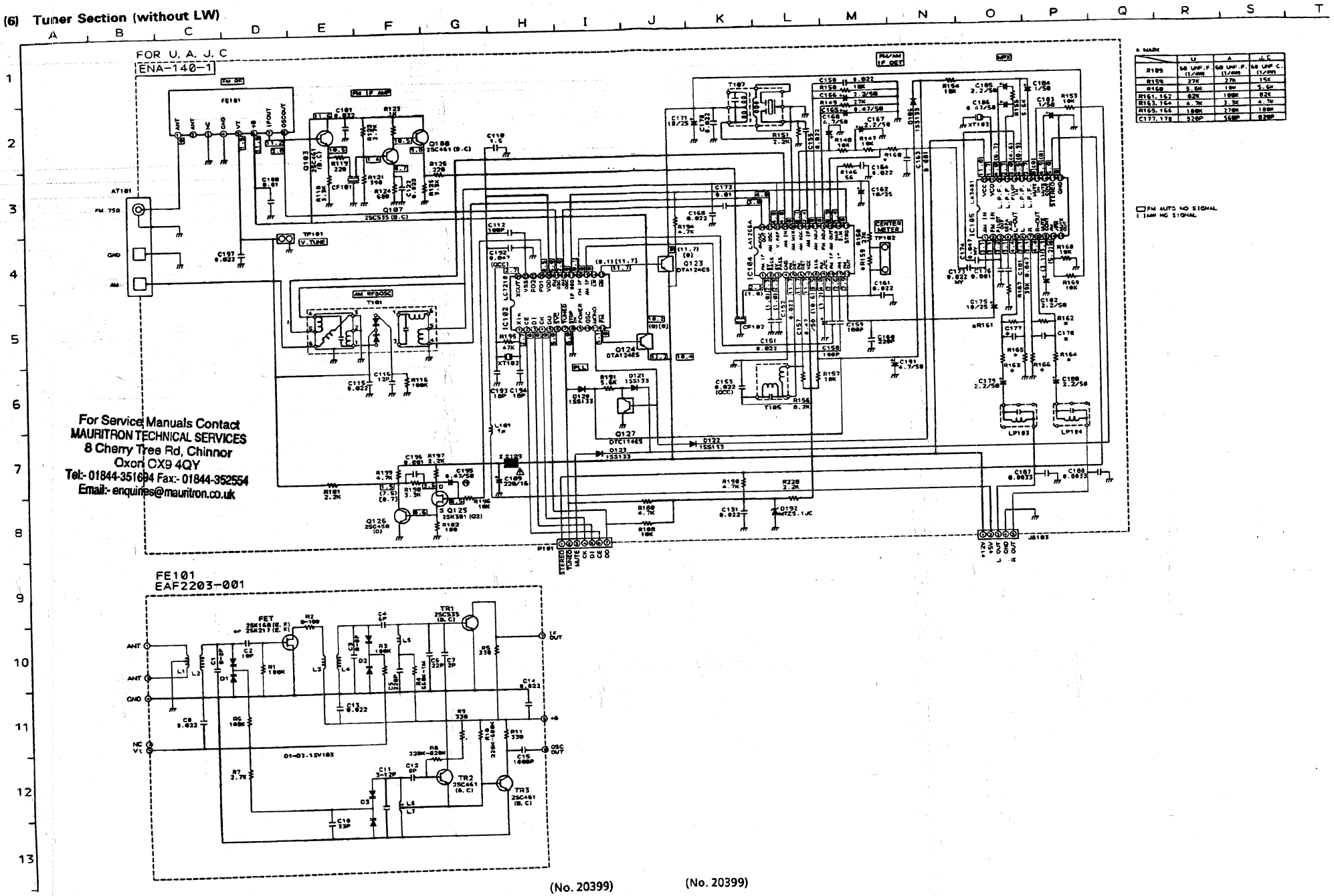
FE101
EAF2203-003 (FOR G. GI)



FE101
EAF2302-001 (FOR VX)



(6) Tuner Section (without LW)



R189	U	A	J, C
	68 UNF, F (1/4W)	68 UNF, F (1/4W)	68 UNF C (1/4W)
R159	27K	27k	15K
R160	5.6K	10K	5.6K
R161, 162	82K	100K	82K
R163, 164	4.7K	3.3K	4.7K
R165, 166	180K	270K	180K
C177, 178	3300P	5600P	8200P

FM AUTO NO SIGNAL
( ) AM NO SIGNAL

(No. 20399) (No. 20399)